AUG. 5 1960

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

Eight U.S. oil men begin detailed inspection of Soviet industry 9

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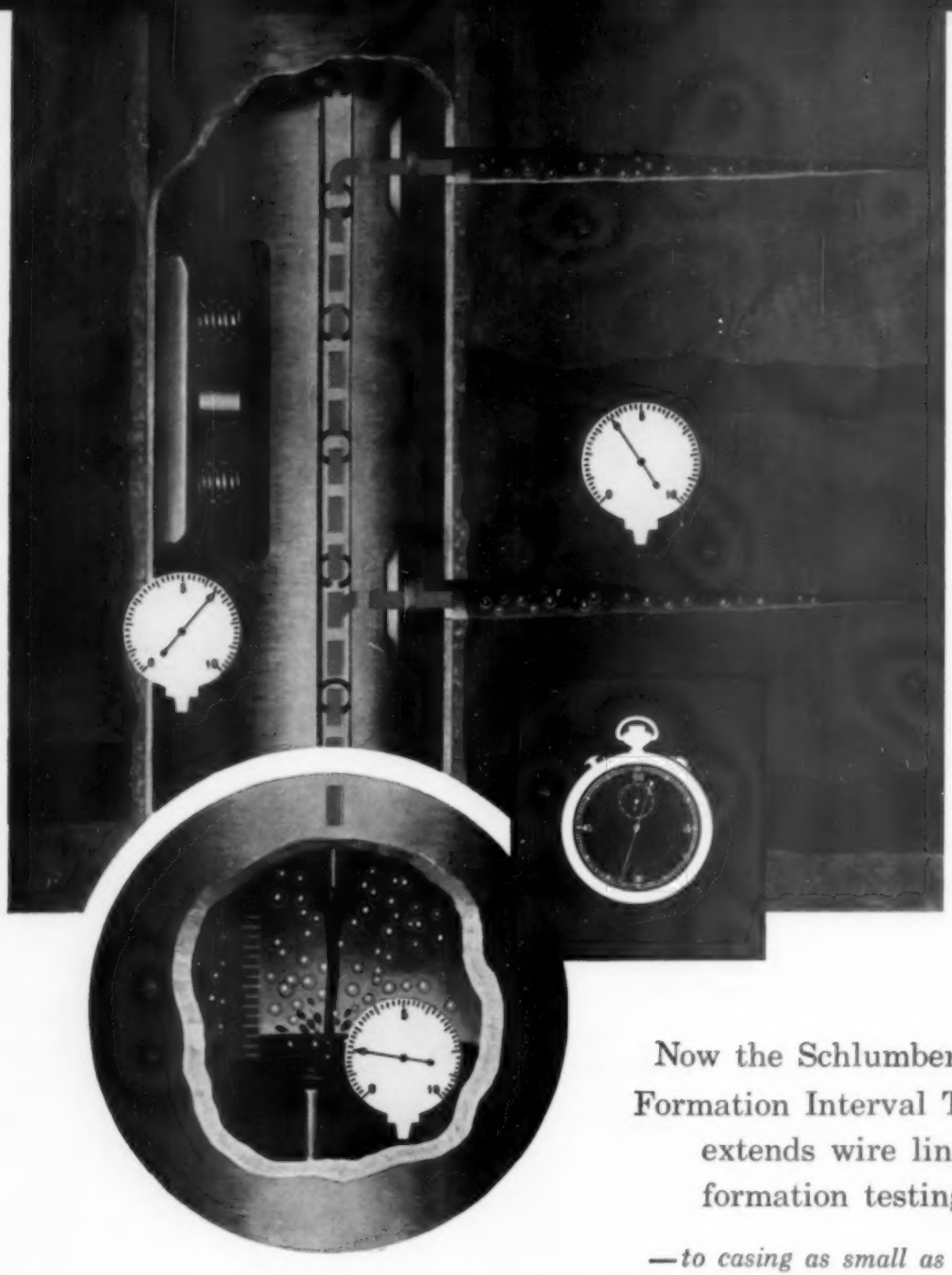

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Views That Make News . . .

"What are the chances that the U.S. market could be insulated from the world influences that are tending to hold down energy prices? Many people hoped that the introduction of first voluntary and then mandatory import controls would set the stage for a sustained increase in domestic crude prices. The events of the last three years have been most disappointing to them.

But in any case, in their preoccupation with the immediate foreign threat, they were apt to overlook the domestic competition. Gas and coal have been hungrily eyeing the crude markets, and could be relied upon to move in strongly if crude prices got out of line. Shale oil in the U.S. and tar sands in Canada are only waiting for crude to raise the price umbrella so that they can become fully competitive. Nuclear energy has begun (prematurely, perhaps) to nibble at the power-station fuel business. In a market like this, it is hard to make profits —least of all monopoly profits—but easy to price yourself out of customers. Too much reliance on import restrictions could prove ineffective and dangerous medicine."

—EDWARD SYMONDS
Petroleum economist
First National City Bank
of New York

"The heating oil business is a good business and is worth fighting for. It won't be easy, but there is a future out there if we want it. Let's get off our duffs and sell oil heating like we have never sold before. This will result in more customers, more volume, and more profit."

—L. S. MARSHMAN
Manager, wholesale department
Mobil Oil Co.

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—MORTON A. STERLING
President
Sunset International
Petroleum Corp.

. . . and Letters

Dear Sir:

I would like to refer to your report, "Aramco Challenges Hendryx's Thesis" [PW—Jun.17'60,p65]. For the legal principles propounded in that paper, Mr. Hendryx is qualified enough to defend his own stand. I would like here to consider the points raised by Mr. George W. Ray, Jr., Aramco's general counsel.

The statement that "no system of law gives one party—even though a state—the right at its will to repudiate its contract or alter it in any way whenever it appears to only one party . . . that it will be in the public interest to do so" is absurd. The fact is that no system of law ever deprives a state from safeguarding the public interest. Only within the last decade, the International Court of Justice ruled as legal the action of the government of Iran in nationalizing the oil industry operating under concession rights. Nobody has ever challenged the legal right of Egypt to unilaterally repudiate the contract of the Universal Suez Canal Co. in 1956, not even Britain and France.

The statement that an oil agreement is "international" by nature is a terminological nicety. What is internation about it? Surely, the concession of Aramco is signed only with the Saudi Arab government for the exploitation of Saudi resources. Whatever other agreements Aramco may have entered into with other parties are separate bodies of law, and in no way do they bind the Saudi Arab government or hinder its actions. The term "international" refers to agreements entered into by two or more sovereign states. This is the legal distinction, for example, between the concession of the Suez Canal Co. and the international treaty of 1888.

Sovereignty is not a "device"; it is a legal principle. The claim to its validity is to offset harmful conditions maintained under such legal safety valves as the sanctity of contracts. The sovereign state is supreme under law because nothing justifies its existence in the first place other than safeguarding the public interest. To maintain harmful conditions is immoral, unethical, and legally unfounded.

HISHAM NAZER
Saudi observer at the
Venezuelan Ministry
of Mines & Hydrocarbons

PETROLEUM WEEK *will publish reader comments each week. Address letters to LeRoy Menzing, Editor,* PETROLEUM WEEK, *330 W. 42nd St., New York 36, N. Y.*

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INSIDE Slant

U.S. SHARE DROPS

While the number of cars, trucks, and buses on the highways continues to increase, the U.S. is steadily losing its share of the world total on a percentage basis.

The shifting trend is reflected in the 1960 world automotive market survey of two sister McGraw-Hill publications, The American Automobile and El Automovil Americano.

The U.S. had 69.3% of the 63,201,000 vehicles on the highways in 1950. Today, it has only 59.6% of the total of 117,788,000.

Of course, 59.6% of 117,788,000 amounts to 70,234,000 vehicles, considerably more than the 43,774,000, or 69.3%, in 1950. But still, the trend is downward. In 1955, the survey shows that the U.S. had 65.7% of the total.

The biggest growth numerically, outside the U.S., has been in western Europe.

There, the total has risen to 24,174,000 from the 8,500,000 in 1950 and 14,447,000 in 1955.

And the lack of growth in the Communist Bloc is amazing. In fact, there was a decline from the 3,574,000 vehicles in 1950 to 3,182,000 in '55. But there has been an upturn since, to a total of 4,866,000 in 1960.

LeRoy Menzing
EDITOR

Good Wells Make Good News

August 5, 1960

A Report on Profitable "Workover" Treatments by Dowell

Workover treatments of old wells frequently yield more net profit than new wells if treatments are designed for reasonable cost and fast payout. Here are four examples of fast-payout treatments:

- **McKenzie County, North Dakota** (Old Oil Well) Production from this Madison lime well had declined to 35 bopd. Completion was through perforations from 8500 to 8590 feet. Dowell used the "Acid Guide"* to engineer the following treatment: 7000 gallons of acid-oil emulsion type Retarded Acid were injected down tubing at 5.4 bpm and 2100 psi. Production rose to 133 bopd and the $3101.00 treatment paid out in 23 days.

- **Ventura County, California** (Old Oil Well) This well had been completed through perforations into the "G" sand from 8174 to 8336 feet. Production had declined to 38 bopd pumping, and re-perforating did not help. Dowell fractured the well using 50,000 gallons lease oil and 40,000 pounds sand. Treatment was down casing at 30 bpm at 4000 psi. After treatment well flowed 500 bopd through casing and declined to 300 bopd before tubing and gas lift valves were installed. Production is now 175 bopd—gas lift. The $5100.00 treatment cost was paid out before tubing was run.

- **Grant County, Kansas** (Old Gas Well) This well had been producing from the Hugoton series through perforations from 2451 to 2697 feet. Deliverability had decreased to 674 mcfd. Dowell fractured using 100,000 gallons fresh water and 86,200 pounds sand. Injection rate was 57.2 bpm at 500 psi maximum. 490 ball sealers were used during treatment to assure stimulation of less permeable sections. After clean-up, deliverability rose to 2146 mcfd. The operator estimated a 7-month payout on the treatment which is considered excellent for the area.

- **Plaquemines Parish, South Louisiana** (Old Oil Well) Production from this Miocene well had declined to 38 bopd. The operator wanted to stimulate production, but did not want to go to the expense of moving in a service rig. Dowell acidized through the Christmas tree with 1000 gallons Mud Acid. Treatment cost was only $930.00 and boosted production to 73 bopd. Payout time was 12 days.

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60-Second Summary / WHAT'S HAPPENING IN OIL

August 5, 1960

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A strong spurt in demand and continued restraints on domestic production are giving U.S. crude postings a firmer tone. Crude stocks have declined 22-million bbl. in the past three months and the over-all inventory build-up has been small for summer months. . . . p. 12

•

Gas pipeline construction is booming. More than $1-billion will be spent in 1960 for new facilities, an increase of $370-million over last year, according to the American Gas Assn. . . . p. 42

•

The Free World is finally getting an intimate look at Russia's oil industry. Eight U.S. oil executives are in Moscow now, on the first leg of a month-long inspection tour of Soviet refineries, research labs, oil fields, and other installations. . . . p. 9

•

The Athabasca tar sands are still giving experimental developers a tough time. Although much has been done on separation processes, actual mining and disposal of the residue are proving troublesome in pilot operations. . . . p. 20

•

Geophysics, as a means of locating wildcats, is on the decline. A study by the American Assn. of Petroleum Geologists indicates more than half of the successful wildcats drilled in the past 12 years were based on geology alone. . . . p. 16

•

The Venezuelan government took 69% of the oil industry's income last year—and the take may go higher. Preliminary figures indicate net profits dropped to $427-million last year, compared with $523-million in 1958. . . . p. 37

•

Corrosion-resistant plastics may soon be used in refinery construction, in addition to maintenance and repair. Much interest is being expressed in this direction. . . . p. 34

•

Candidates Nixon and Kennedy appear to differ on industry pricing rules. Kennedy was a cosponsor of the S-11 bill, which would upset "good faith" price protection. Nixon, while in Congress, wanted to write "good faith" pricing into law. . . . p. 14

•

Venezuela has halted some discount sales of crude. It has suggested that Middle East nations adopt a similar practice. . . . p. 11

•

Puerto Rico's industrial growth and political stability are enticing U.S. oil companies. Four majors are moving in on the island, to vie with three others already there. . . . p. 44

Up to the Minute

SIGNIFICANT LATE NEWS

August 5, 1960

At least one Federal Power Commissioner fears that price ceilings on natural gas will divert supplies from consumer markets. Commissioner Arthur Kline made that comment this week after FPC decided to reduce the initial price of seven Texas producers from 20¢ per Mcf. to 18¢. A month ago, FPC had approved the higher price of seven Texas producers from 20¢ per Mcf. to 18¢. A month ago, FPC had approved the higher price on an interstate sale to Peoples Gulf Coast Natural Gas Pipeline Co., overruling its staff-recommended 18¢ limit. The reduction to 18¢ was made by FPC this week after it had considered an appeal by producers on price escalation limitations.

FPC's view is that initial prices cannot exceed the highest previous price allowed in an area. In this case, the 18¢ initial price was the highest approved going price in Railroad Commission Districts 2 and 4, in Southwest Texas. However, FPC did approve sales to Peoples Gulf Coast at 20¢ per Mcf. in adjacent District 3, since that price had previously been allowed in Brazoria County in that district.

Commissioner Kline predicted that there may be no more 18¢ gas available to interstate consumers "in a short time," due to sales at higher prices to out-of-state industrial users that are not under control of FPC. "The probable consequence of our action here will be to divert all the remaining gas from the domestic and commercial market to the industrial market," he said.

•

The Atomic Energy Commission may try another nonnuclear explosion in the Bureau of Mines' shale mine in Colorado next week. But the next blast will be five times as powerful as this week's explosion of nitromethane, equivalent to 1,000 lb. of TNT. The test blast was made in a 115-ft. hole at Rifle, Colo.

•

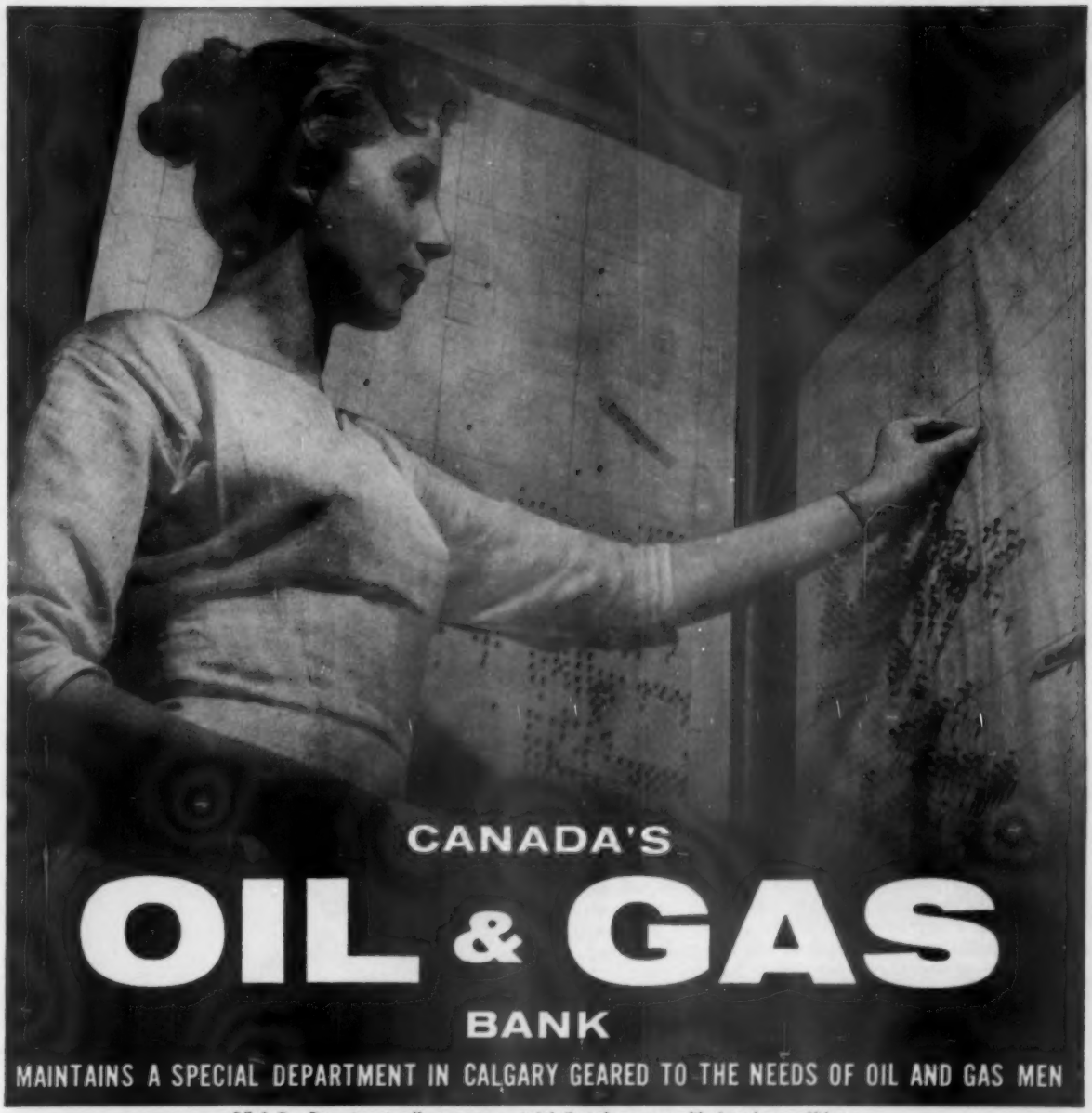
Distribution employees of Standard Oil Co. (Ohio) went on strike in three districts in Ohio this week. The union, Independent Petroleum Workers, Inc., represents 900 truck drivers, warehousemen, and loaders, and some service station attendants, in the Cleveland, Akron, and Youngstown districts.

•

The Senate reconvenes Monday amid some speculation that another try will be made to reduce the depletion percentage for oil and gas. Observers predict that because of the broader issues expected to come before the Senate, any depletion-cutting attempt won't get far. But they also note that Republican senators—particularly Delaware's John J. Williams, long an advocate of a reduction in oil's percentage—may try to bring the issue to a head just to embarrass the Democrats on their platform pledge to close "conspicuous loopholes" in taxes.

•

Uruguay acted this week to bar offers of Soviet crude. A stipulation in an invitation to bid on crude supplies to Ancap, the government oil agency, is that suppliers hold "fidelity with the Uruguayan state and loyalty with our democratic system and our international policy."



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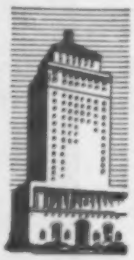

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* * *

Trained as a chemical engineer, J. A. Graham joined Du Pont 15 years ago. Since then, he's devoted his time and talents to becoming a specialist in the field of industrial maintenance painting. In Detroit, Cleveland, Los Angeles and Philadelphia, he's helped solve problems of paint maintenance for the automotive, aircraft, steel, petroleum and marine industries. Now Eastern District Manager, Industrial Maintenance Sales, Jack is a member of the Corrosion Engineers Society.

DU PONT PAINTS

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

U.S. Oil Experts Inspect Soviet Fields and Plants

A handpicked team of U.S. oil executives—each an expert in his chosen field—flew to Moscow this week to begin an intimate, month-long inspection of the Soviet oil industry.

The group, thoroughly briefed in the niceties of diplomatic protocol, and alerted to the touchy tangents of East-West relations, left New York Monday.

The first stop was Amsterdam, Holland; thence eastward to the Soviet capital to start the junket that will encompass thousands of miles of Soviet countryside.

The oil men will spend the entire month of August in a carefully selected tour of oil fields, refineries, and research facilities from Baku and the Caspian Sea on the south, to Leningrad and the Baltic Sea on the north, to Omsk, deep in the interior of Siberia.

The trip is expected to result in the Free World's first real appraisal of the extent and accomplishments of the Soviet petroleum industry—something that has been long needed.

Up to now, the western world's knowledge of Russian exploration, production, refining, transportation, research, and other oil activities has been based on Moscow statements, unofficial sources, publications, reports, and sometimes pure speculation.

But since Russia's "official" pronouncements frequently contain more propaganda than fact, and unofficial reports generally are incomplete or contradictory, this has led to confusion, distortion, and a fuzzy picture of the Soviet industry as it really is.

And this means that, for the most part, the U.S. evaluation of Russia's oil progress and potential has been more of an educated guess than a documented perspective.

A detailed report on the U.S. team's findings and conclusions will be given to the American industry and the Free World this fall.

The mechanics for the way the report will be written and distributed are yet to be worked out.

But it will almost certainly be prepared under the aegis of the American Petroleum Institute, which aided the U.S. State Dept. in arranging the trips.

Some of the American oil men are returning to this country immediately after the tour is concluded. But others have Western Europe stopovers on their agendas, so it will be mid-September or thereabouts before all are back on U.S. shores.

The time needed to write, edit, and publish the collected impressions means it will be early October before more than oral reports are available to the U.S. industry.

Much, of course, depends on the cooperation of the Russians, once the tour actually gets under way. But the Americans are in no mood for a patty-cake tour which would bypass the most interesting sites and activities.

This was made clear by the U.S. executives in the prolonged discussions with State Dept. and Russian embassy officials that preceded the trip.

At one point, the Americans threatened to forget about the whole thing, when the Soviets struck out several cities and refineries from the proposed itinerary.

"We wanted to see the new plants and places, not the old ones," one U.S. executive commented. "It wouldn't have been worthwhile going all that distance to see something that we knew all about anyhow."

The Soviets restored the sites to the itinerary. But the trip almost fell through a second time when the discussions went on and on, and the American oil men grew weary of the delay and the indefiniteness of the whole affair.

Eight U.S. oil experts are in the official party, together with two Russian-speaking members of the Dept. of the Interior.

Heading the delegation is W. W. Keeler, executive vice-president of Phillips Petroleum Co., an expert in refining techniques and technology.

Others in the party are:

- Ira H. Cram, senior vice-president of Continental Oil Co., an authority on geology and exploration.
- George S. Dunham, a director and senior vice-president of Socony Mobil Oil Co., whose background includes processing and refinery design, and supply and transportation.
- W. M. Elias, vice-president of Pan American Petroleum Corp., whose forte is production.
- George F. Getty II, president of Tidewater Oil Co., a young executive who has been moving up fast in industry ranks, and whose background is broad-based.
- George T. Piercy, head of the petroleum economics department of

W. W. Keeler

G. F. Getty II

Ira H. Cram

G. S. Dunham

G. T. Piercy

N. D. Smith, Jr.

W. M. Elias

N. J. Smith

Standard Oil Co. (N.J.), an expert on global statistics.

• Neal J. Smith, vice-president of Chevron Oil Co. (Houston), an old hand at geology and exploration.

• Dr. Noyes D. Smith, Jr., vice-president of Shell Development Co., a sharpshooter in the field of research, technology, and development.

The Interior Dept. representatives are Alex Gakner and Robert Ebel.

In Moscow, the American team will charter a plane to make the visits that are to span thousands of miles between now and Sept. 1.

Even though hours were spent on the itinerary before departure, it was still in a flexible state when the group left New York. The U.S. oil men will resolve the final details in Moscow, on a give-and-take basis.

In broad outlines, however, the U.S. team wants to fly east to Omsk, to see the new refineries there; down to Baku and the offshore installations in the Caspian Sea; then north to Leningrad and the research facilities there; and back to Moscow.

As part of the East-West exchange, a Russian group will tour U.S. oil fields and installations later this year on a reciprocal basis.

No date has been set as yet, but the expectation is that the Soviet team will come to this country in late September or early October.

It will, no doubt, be composed of the Soviets' sharpest minds in petroleum.

The itinerary for this junket is still in the making. It is anticipated, however, that some oil companies will be reluctant to open their doors to the Russians, and considerable persuasion may be necessary.

Some are known to be dead set against any participation whatsoever.

The American trip could represent somewhat of an aboutface, too, for the State Dept., which restricts the areas that may be visited by representatives of the U.S.S.R.

The State Dept. is sponsor of the exchange, not the oil industry or API. It is a phase of the East-West cultural exchange program dating back to the early '50s.

The State Dept. set up the program for the amicable trading of technicians, industrialists, artists, economists, and students in mid-1950.

The program was suspended in November, 1956, when Russian troops invaded Hungary. But in January, 1958, after months of detailed planning, it was re-established.

Since that time, a half-dozen or more business and industry groups, including steel, chemicals, and agriculture, have exchanged visits.

Break Helps U.S. Tankers

Things are looking up—for the moment, at least—for some U.S.-flag tanker operators hauling clean cargoes in the Atlantic and Gulf Coast markets.

Even though the world market is glutted with more tanker tonnage than it knows what to do with, these U.S. coastal areas are experiencing a temporary shortage of bottoms.

The margin isn't much, but it's enough to be noticeable.

In the past week or so, there has been a modest upturn in charter rates for tankers handling clean products along the Eastern and Gulf seaboards.

Charter rates for vessels plying between Port Arthur, Tex., and New York harbor, for example, are up 75¢ a ton from the level prevailing four to six weeks ago. This puts the current rate around $2.85 a ton.

Tankermen agree that they are "hurting less" than a few weeks back, but the market generally is anything but sunny.

Tankers hauling dirty cargoes have not been affected by the slight upturn in business, however.

Charter rates for the vessels moving unrefined products have been fairly steady for the past several months. This rate is around $2.10 per ton.

Many factors contributed to the upturn in the charter rate for clean cargo tankers.

Fifteen or more U.S.-flag tankers are transporting grain overseas to foreign-aid countries at the present.

And another 50 or so are laid up for lack of charters.

On top of this, the July demand for refined products was on the strong side, keeping available vessels on the move.

U.S. coastal markets are reserved for American-flag tankers. Thus, there is no competition from foreign-flag vessels.

All of these factors added up to a momentary bright spot for summer charters and U.S.-flag operators.

Significant Sidelights

■ **Perhaps it's an isolated case, but the experience of one metropolitan New York homeowner could be cited as an example of why some fuel oil jobbers are losing customers to natural gas.**

They're simply not on their toes, it would seem.

Here's what happened:

Two youngsters watching a gas crew install a neighborhood service line mentioned to one of the diggers that their parents were going to get a new oil burner and change their heating system.

The gas company's tipster system must be pretty good, for within 24 hours a sales representative phoned the homeowner and asked if he could come by to talk about it.

Within a week, a gas heat engineer and a plumber had inspected the property, and had provided the homeowner with an installation estimate, a one-year guarantee on maximum fuel costs, and some persuasive arguments, charts, and literature about the cleanliness, efficiency, and convenience of gas heat.

The homeowner asked his fuel oil supplier to make a similar inspection and bid. That was weeks ago. Despite two more specific suggestions from the homeowner, the dealer hasn't been around yet!

P.S.: The gas man has phoned regularly since, and he hasn't missed a trick in sniping at the slowmoving fuel oil dealer, either.

Labor Reform Law to Get First Test

The Landrum-Griffin labor reform law will get its first legal test on Labor Secretary James P. Mitchell's action to invalidate a union election at Esso Standard's Bayway (N.J.) refinery.

The election was held last February by the Independent Petroleum Workers Union to select new officers.

A suit has been filed in the U.S. District Court in Newark, asking that the election be declared null and void. It seeks a new election.

Mitchell alleges that the union failed to provide adequate safeguards to insure a fair election.

He says an investigation by the Labor Dept.'s Bureau of Labor-Management showed that:

- Excess ballots were printed for the election;
- Ballots were removed from printers' packages before mailing;
- Ballots were returned to a post office box that was freely accessible; and
- Ballots were removed from the box by supporters of the winning union officers before backers of the losing candidates arrived.

The election losers complained to Mitchell after exhausting legal appeals under the union constitution—a stipulation of the new labor law.

It was then that Mitchell investigated and decided that the election procedures of the law had not been properly followed. If the court agrees, a new election will be held under his supervision.

The background of the election contest is this: The winners of the February election, led by President John J. Coppa, have attempted to swing the independent union over to the International Brotherhood of Teamsters. However, after they took office, the union membership voted in a National Labor Relations Board election to reject the Teamsters and remain independent.

The union members first protested the officer election results last Mar. 1. They filed charges with Mitchell on June 1. Under the Landrum-Griffin law, Mitchell had 60 days in which to file a suit if he decided a violation had occurred.

Also on the labor front this week, several independent unions were taking strike votes at Indiana Standard refineries.

All of the unions, affiliated in an Independent Oil Workers Union (IOWU), are plugging for a 6% wage hike and 6% boost in fringe benefits.

The refineries are located in Mandan, N. D., Casper, Wyo., and Neodesha, Kan.

The votes followed on the heels of a go-ahead strike vote by the Independent Petroleum Workers of America at Indiana Standard's Whiting refinery.

IPWA, also affiliated with IOWU, represents some 4,400 workers at the plant. The vote in the special membership election was 2,182 for striking, and 985 against. The union's contract will expire Aug. 14, but the union says it hopes to negotiate further with Soind before then. IPWA also is driving for the over-all union demand of a 6% boost in wages and fringe benefits.

In the meantime, a smaller independent union at Whiting started taking its own strike vote. The Office Employees Assn., representing 385 office personnel, has asked its members for strike authorization in the event an agreement can't be reached on a 6% wage hike demand. OEA has a contract expiring Feb. 23, 1961, but has reopened negotiations under a wage reopener clause.

Venezuela Acts to Bar Discounts

Venezuela's Oil Ministry is stepping in to halt some discount sales of crude, and has suggested that Middle East nations should adopt a similar attitude.

Oil Minister Juan Perez Alfonzo announced this week that, "The ministry has had to resort to the alternative of ordering interruption of certain sales operations realized by various companies at harmful prices, whose volume could be of the magnitude of some 50,000 to 100,000 b/d." The action involved two companies which Perez declined to identify.

Reliable sources listed the companies as Sun and Superior.

A ministry memorandum to one of the companies said the transactions were being referred for tax study.

Venezuela's action, Perez said, has been communicated to Arab countries "in order that on their part they may take a similar attitude which would strengthen the Venezuelan decision."

Perez made the statement jointly with Mohammed Salman, petroleum affairs director of the Arab League.

The firmer stand by Venezuela is a departure from its previous policy of "persuasion" against sales involving steep discounts.

Venezuela, Perez commented, has had to overcome "difficulties and considerations of various kinds before arriving at a positive decision with respect to a manner of achieving a defense of prices."

The decision to order a halt to certain sales, he explained, came after the first year of experience with the Venezuelan Coordinating Commission, which used methods of persuasion, "to prevent sales which could cause price deterioration."

Union Oil to Aid Singapore Plant

Union Oil Co. of California will loan Japan's Maruzen Oil $5-million for a Singapore refinery project in return for a five-year crude supply contract.

The two companies are already associated in Unimar, a joint southeast Asian marketing company based in Hongkong, which may wind up also as the sales agent for the Singapore refinery.

A Maruzen Oil spokesman said last week that the refinery loan from Union Oil will be made for five years at 5%.

Union Oil's new supply contract, he said, will cover about 20,000 b/d of Middle East Crude, to be used either in Singapore or in Japan.

Maruzen has now decided to boost the capacity of the projected Singapore plant to 20,000 b/d, from the 12,000 b/d originally planned.

Maruzen said Union Oil's loan will not give the U.S. company a stake in the refining project, which will be a joint venture of Maruzen and Toyo Menka, a Japanese company with extensive interests in southeast Asia.

The plant is now scheduled to go on stream in November, 1961. The Japanese government had approved the venture on condition that a foreign loan be lined up to help finance it. According to a Maruzen official, financing talks with Socony had failed, due to the recent anti-U.S. political demonstrations in Japan.

U.S. Crude Postings Take Firmer Tone

A strong summer demand and continued restraint on domestic production are clearing up price weakness and bringing over-all inventories into closer balance.

The mid-summer strength in demand that has brought considerable improvement to product prices is also being reflected in crude postings in two areas.

American Petrofina Co. of Texas effective Aug. 1 boosted its posting for North Texas crude by 19¢ a bbl., restoring a reduction made Apr. 9.

The company's posting now is topped at $3.01 a bbl. for 40-gravity and above with a 2¢ downward gravity differential below 40-gravity. Petrofina's price now matches other postings in North Texas.

At the time of the reduction last April, Petrofina was buying about 5,500 b/d in Archer, Baylor, Clay, Jack, Knox, Stephens, Throckmorton, Wichita, Wilbarger, and Young counties.

Also effective Aug. 1, Pennsylvania Grade crude prices were increased from 5¢ to 10¢ a bbl. by Joseph Seep Purchasing Agency of South Penn Oil Co.

Bradford crude in the Bradford Transit Co. line was advanced 10¢ to $4.80 a bbl., Bradford crude in the National Transit Co. line was increased 5¢ to $4.75 a bbl., and Pennsylvania Grade crude in the Eureka Pipe Line Co. line was raised 10¢ to $4.17 a bbl.

No changes were made in postings for Middle Grade or Southwest Pennsylvania district crudes.

The company said that "continued strong demand justifies higher postings for . . . grades not affected by certain pipeline gathering rate increases effective Aug. 1."

Producer organizations in Texas hailed the advance in North Texas and one group went so far as to urge retailers to re-evaluate gasoline prices at "realistic" levels.

That plea came from N. A. Steed, president of North Texas Oil & Gas Assn. His remarks on gasoline prices were directed primarily at retailers in the Wichita Falls area where Petrofina has one of its two refineries. That area has been plagued by gasoline price wars.

Steed noted that since early April the North Texas producers group and Petrofina had reached a "greater understanding of mutual problems."

Petrofina's restoration of its postings was also praised by John G. Hurd, president of Texas Independent Producers & Royalty Owners Assn.

The strong summer demand and continued restraints on domestic crude production are the factors supporting a firmer tone in postings.

Total demand since the end of April has averaged 9.3-million b/d, up 4.2% over the May-through-July period of 1959, and a few percentage points better than the pace of demand for the year to date over 1959.

Tight allowables in several states have held crude production in the past three months to an average of 6.8-million b/d, 3% below the May-June-July rate of last year.

And while present inventories of the major products are still considered above the so-called "desirable" level, the build-up in total stocks since the end of April has been only one-fourth the rate that occurred between April 30 and July 31 of 1959.

Inventories of crude and all products, now at 772-million bbl., are only 12-million bbl. higher than the end of April, and 43-million bbl. under a year ago.

Crude inventories in the U.S. are at their lowest level in two years, at just under 245-million bbl.

And by the end of this week, the total crude on hand is expected to be below the August, 1958, level of 244.8-million bbl., and possibly even as low as the 243.2-million bbl. in storage at the end of January, 1951, the low of recent years.

Since the end of last April, crude inventories have declined by 22-million bbl.

In the corresponding period of last year, crude stocks rose by 11-million bbl.

An increase in crude inventories in the May-July period is normal when demand is usually at its seasonally low point of the year.

All of the decline in crude does not reflect increased demand, since refinery runs since the end of April have been higher than what many economists consider necessary.

Runs in that period averaged 8,088,000 b/d, up 2.1% over the like three months of 1959.

While crude stocks have declined, total product inventories since the end of April have advanced by 31.7-million bbl., though the gain was slightly smaller than during the May-July period last year.

Despite the firmer tone in the over-all crude market in the U.S., Oklahoma producers this week were meeting to protest an extension of gathering charges by some buyers.

Their complaints were over a spread of 10¢-per-bbl. charges to more areas by several buyers—some with pipeline gathering systems and others that truck crude.

Here's More First-Half Oil Earnings

(in thousands of dollars)

Company	First Quarter Net Income	% Change 1960-59	First Half Net Income	% Change 1960-59
Ambassador	$ 513	+565.0%	$ 694	+285.7%
Atlantic	8,726	−29.3	16,917	− 2.5
California Std.	60,728	+ 5.4	128,589	+ 8.8
Colorado Oil & Gas	(180)*	.....	(313)	.....
Crescent	714	+ 4.1	1,416	+ 2.5
Gulf	81,824	+22.7	156,096	+10.1
Indiana Std.	31,690	−29.1	64,887	−17.7
International Pet.	.....	.....	17,000	+68.3
Jersey Std.	170,000	+ 1.8	315,000	.....
Kentucky Std.	3,398	+ 4.1	6,958	+ 3.2
Ohio Oil	10,279	+ 0.8	17,733	− 4.4
Ohio Std.	5,066	− 0.6	10,956	+11.1
Richfield (L.A.)	.....	.....	13,988	+30.8
Shell	34,545	+ 0.2	69,312	+ 0.2
Skelly	5,909	−10.5	11,090	− 20.6
Sunray Mid-Cont.	9,440	− 2.8	18,743	−10.5
Texas Eastern	8,592	+40.7	15,739	+36.8
Union	5,530	+13.1	13,370	+24.1

*Loss

What's New / IN THE INDUSTRY

The first deep test off the west coast of Florida is being planned by a subsidiary of Standard Oil Co. of California.

The California Co. has filed for a permit to drill its No. 1 California-Coastal, state lease 224-B, to at least 13,500 ft., 4 mi. off La Costa Island, Lee County. The company is earning a 50% interest in 4.5-million acres held by Coastal Petroleum Co.

The California Co. also was a partner, with Gulf Oil Corp., in a recent unsuccessful test off the Florida Keys —the No. 1 Marquesas, 35 mi. southwest of Key West.

•

A nationwide campaign will get under way this month to call motorists' attention to the high tax on gasoline.

The industry-sponsored Gasoline Tax Education Committee will use newspaper ads, radio announcements, and billboards. New Hampshire newspapers are running the first ads this week.

•

A sale of oil and gas rights covering 274,000 acres in northeastern British Columbia brought almost $3.3-million last week.

Shell Oil Co. paid $759,000 for an exploration permit covering 48,549 acres in the Laird River Basin. British American Oil Co., Ltd., paid $580,000 for a drilling reservation on 24,473 acres. Other bids included Mobil Oil of Canada's $301,162 for an exploration permit on 17,064 acres and Phillips Petroleum Co.'s $365,300 for drilling reservations on 28,000 acres.

Shell, B-A, and Mobil teamed up to pay $151,162 for an exploration permit on 47,725 acres.

•

At least one oil company president challenges the pessimistic view of some industry spokesmen on the chances of finding more oil in California.

"There's a lot of oil to be found in California and we're spending money to find it," said Howard G. Vesper, president of Standard Oil Co. of California, Western Operations, Inc.

He said new reserves would probably be found in the southern San Joaquin Valley and in the Santa Clara River area. "We're also looking rather generally in the Los Angeles Basin," he added.

•

Arabian American Oil Co., the only industrial company with its own trans-Atlantic airline, will discontinue its flights by the end of the year.

In an economy move, the company has already curtailed its flights to the Middle East from two each week to three every two weeks. Aramco plans to sell its three DC-6Bs, which cost the company about $1.5-million each.

•

Two San Antonio oil men are planning a 150-million cf/d natural gas gathering system in nine counties in Southwest Texas.

Kendall A. Ehman and William A. Cassin say they plan to seek permission to build a 300- to 400-mi. line next month. They hope to join the Lehman interests of New York in building the line and facilities.

Dedication of gas reserves by Sun Oil, Gulf Oil, and several independents already has been obtained, they say. Border Gas Transmission would build the line for transmission of the gas for proposed sale to Texas Eastern Transmission Corp.

The line would extend through Webb, Zapata, Starr, Jim Hogg, Brooks, Dimmit, Zavala, Maverick, and La Salle Counties.

•

Trans-Mountain Oil Pipe Line Co.'s crude deliveries during the third quarter will run about 25% under the daily rate of the first half.

The reduction to about 96,000 b/d from the 125,595 b/d of the first six months of the year will result from turnarounds at Vancouver refineries, according to D. M. Morrison, Trans-Mountain president.

•

Correction

BP Exploration Co. (Alaska) is not curtailing operations in Alaska. PETROLEUM WEEK had reported that the company was one of two firms cutting back due to the global crude surplus and high operating costs in Alaska (PW—Jul.29'60,p8).

STUCK PIPE?

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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
August 5, 1960

Take a look at the antitrust issues in the presidential campaign. On the surface, candidates Nixon and Kennedy both appear to back strong enforcement of the antitrust laws. Nixon's friend and advisor, Atty. Gen. William P. Rogers, has a lengthy record of antitrust prosecution—including several oil industry cases. Nixon presumably supports Rogers' record. Kennedy, too, has gone on record as favoring stringent enforcement. In the background of the candidates, however, lies one important split over a major antitrust issue. Kennedy was a cosponsor of the Kefauver pricing bill, S-11, which would upset the court interpretation of the Robinson-Patman Act that "good faith" is a prima facie defense against charges of price discrimination. Nixon, while in Congress, sponsored a bill which would have written into law the U.S. Supreme Court interpretation.

•

The Pentagon is troubled by the Soviet expansion in oil trade—particularly its effect on military procurement. Top military leaders are studying a series of reports which could lead to altering U.S. policy on buying products. Currently, any purchases of products refined from Soviet crude are barred. But the Pentagon is trying to look down the road and see what knotty problems might develop in procurement if Russia manages to sustain its present export drive. For example, what would be U.S. policy if refiners operating in a foreign country and selling to the Defense Dept. there begin to use Russian oil in sufficient quantity to endanger the military's purchasing program? Pentagon officials are discussing the possibilities: maintenance of present policy, a loosening-up, or even tighter restrictions.

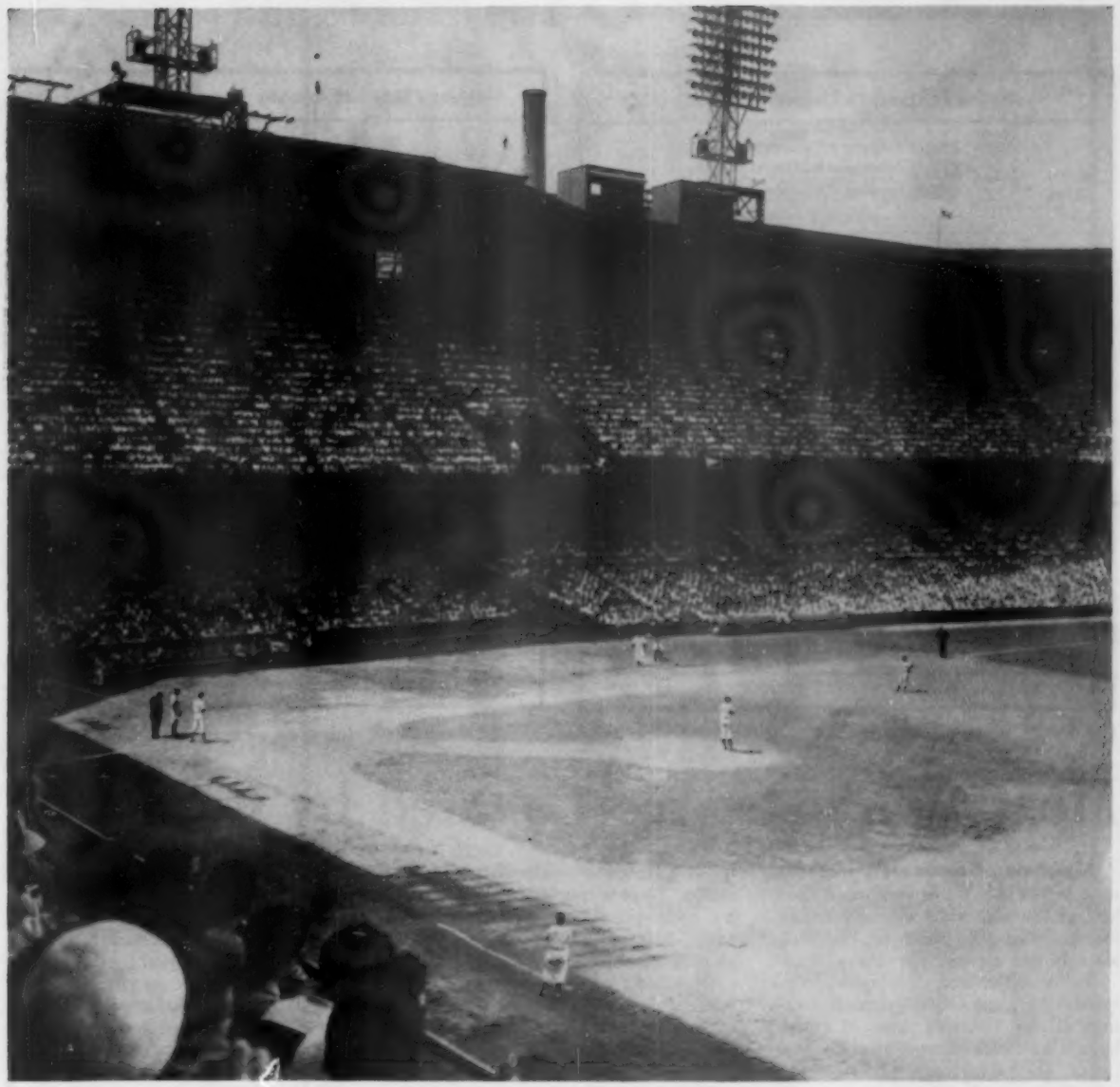
There appears little likelihood that U.S. policy would be changed to remove the ban on military buying of Russian oil and products. But such a move is among the possibilities of being considered. So far, the Pentagon strategists aren't under pressure for a quick decision. Any major change in military petroleum procurement policies probably would be submitted to the National Security Council.

•

Import allocations for residual fuel oil for the fourth quarter are due about mid-August, if Interior officials meet their schedule. New allocations are supposed to be announced 45 days prior to the start of an import period—but that time schedule hasn't been kept so far. Importers had just 30 days notice on the crude and products allocations for the last half of 1960 and the resid quotas for the third quarter. The lead time was even shorter on the announcement of first-half allocations. But with only resid to worry about now, the expectation is that the quotas will be coming out about Aug. 15.

So far, Interior Dept. officials are keeping quiet on the next allocations, though all signs point to a big hike over the third quarter. Residual importers on the East Coast have been urging a fourth-quarter quota of about 560,000 b/d, a volume they say is necessary to meet the seasonal increase in demand and allow for some stock accumulation.

The government changed to a quarterly allocation plan for resid starting in July, and set the third-quarter quota at 249,999 b/d for the areas east of the Rockies. In 1959, the District I-IV resid allocation for the final six months of the year averaged 363,433 b/d.



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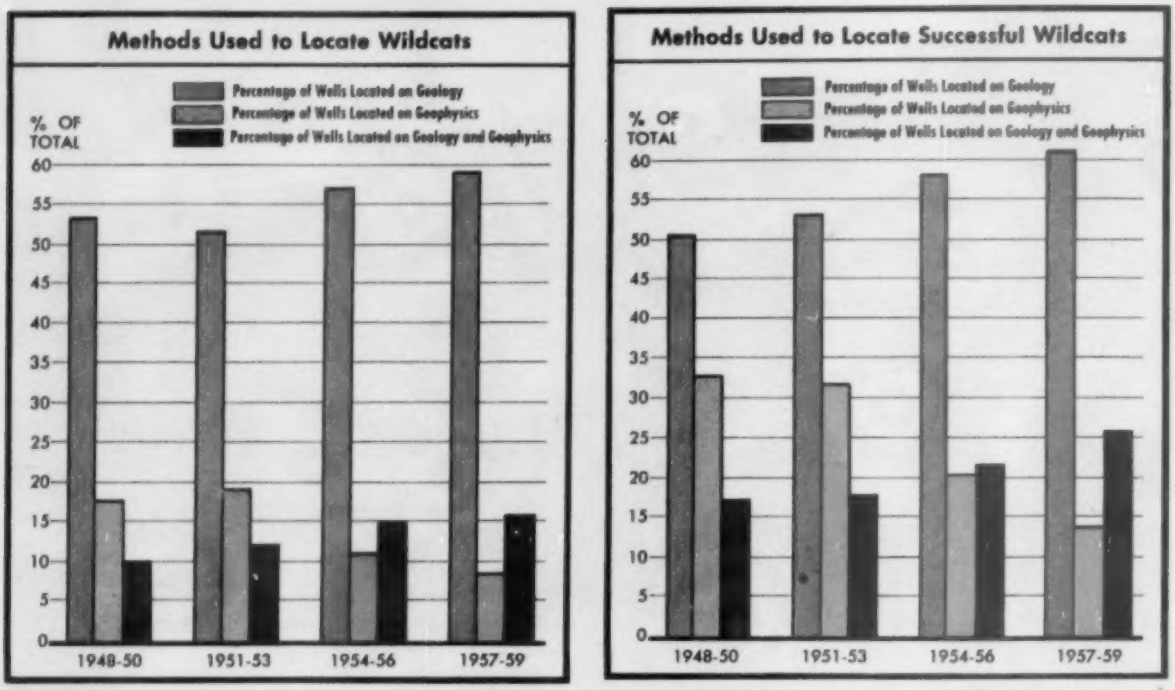


GEOLOGY is a growing factor in the location of wildcat drilling sites (left) and in locating those successfully completed (right).

Most Wildcats Are Located by Geology

A restudy of exploratory methods used in the U.S. shows that more than half of the successful wildcats drilled in the past 12 years in the U.S. were based on geology alone.

B. W. Blanpied, geological consultant for Gulf Oil Corp. and chairman of the American Assn. of Petroleum Geologists' Committee on Statistics of Exploratory Drilling, has compiled a new summary of trends in exploratory methods. The study is based on statistics concerning the basis of location of new field wildcats.

The committee's annual report on exploratory drilling in 1959 (PW—Mar.26'60,p11) contained some figures on results of various methods.

Blanpied has taken these figures, running back 12 years, and has drawn up charts (above) showing statistical percentages in the use of geology, geophysics, and combined geology and geophysics in making new field wildcat locations.

His report, published in the July issue of the AAPG Bulletin, also contains new figures on exploratory methods used in Texas, New Mexico, and Louisiana.

The AAPG study shows that roughly 25% of the successful wildcats in the 12-year period were located by geophysical methods alone, and some 20% with geology and geophysics combined.

Blanpied's study shows that of all successful technically located wildcats, 50% were located on geology alone in the first three-year period—1948 through 1950.

This percentage increased steadily to nearly 61% in the last three-year period, through 1959.

Conversely, locations based on geophysics alone represented nearly 33% of all successful wildcats in the first period and declined steadily thereafter to near 14% in 1957-59.

For locations based on the combination of geology and geophysics, Blanpied reports a trend just about opposite that shown for geophysics alone, with nearly 17% in the first period, dropping to 14% in 1949-51, then increasing to above 25% for the last three-year period.

The trend from the use of geophysics to geology is shown in a study of all new field wildcats drilled in the U.S. over the past 12 years.

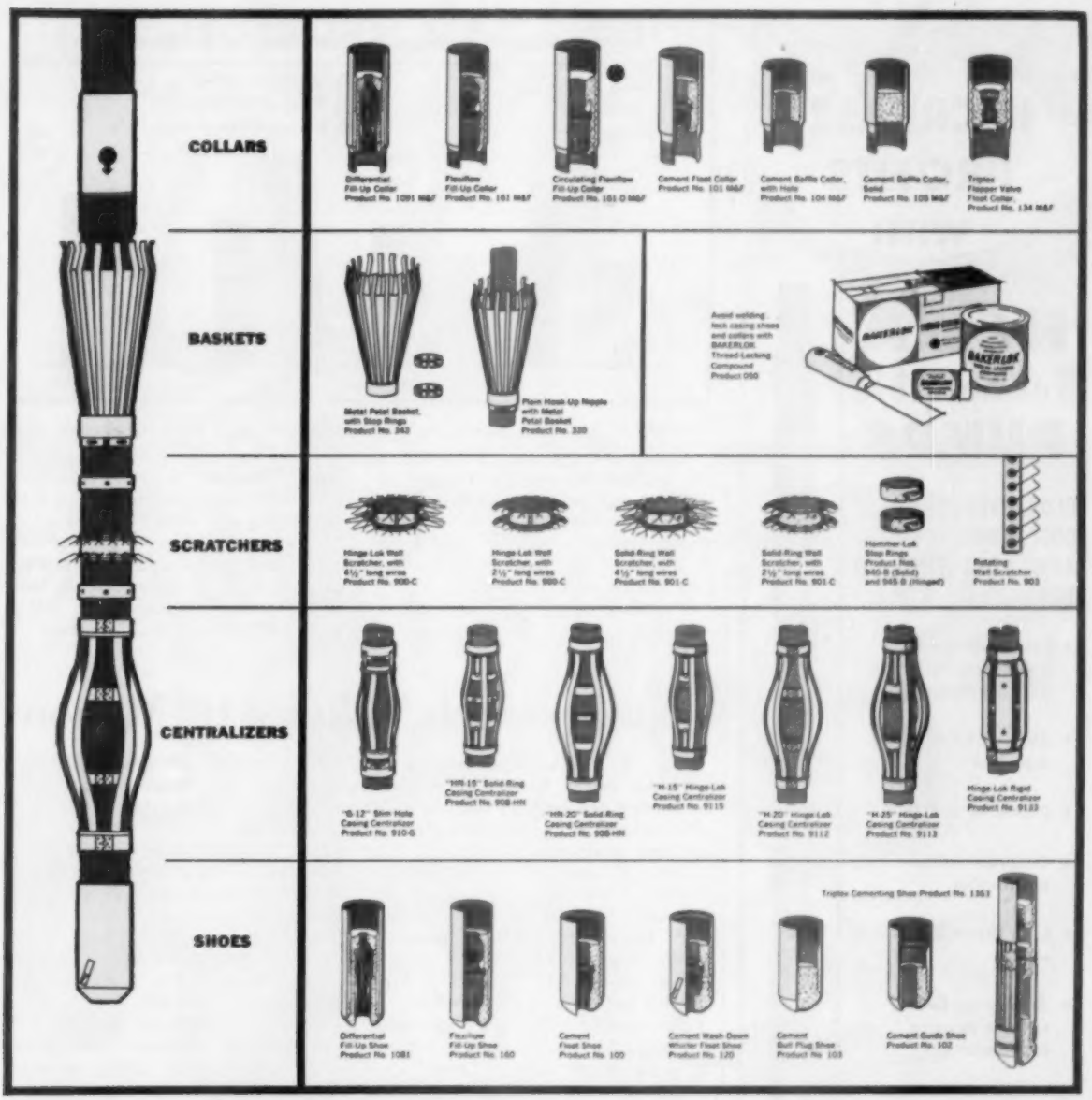
Blanpied included all wildcats drilled in this category, whether located by technical or other methods. This study shows that 52% of all such wildcats were located on geology in the first three-year period. This dropped to 51% in the 1951-53 period, then increased steadily to more than 59% in the last period.

For geophysically based locations, the peak period was 1951-53, with more than 19%. The percentage of such locations decreased to slightly more than 8% in 1957-59.

The combination of geology and geophysics was used for 10% of the locations in the first period, increasing to a high of above 17% in the 1956-58 period, and dropping slightly in the final period.

Says Blanpied: "It appears that the peak in the use of geophysical methods for making locations for new field wildcats may have occurred prior to or around the time of World War II. The decline is due no doubt to exploratory thinking that most potentially productive areas were already covered by a geophysical tool or tools, and to the relatively high geophysical cost per barrel of oil."

Geophysics, however, still shows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Plain Hook-Up Nipple with Metal Petal Basket Product No. 330
Avoid welding heat casing shoes and collars with BAKERLOK Thread-Locking Compound Product 050
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"HH-15" Solid-Ring Casing Centralizer Product No. 908-HH
"HH-20" Solid-Ring Casing Centralizer Product No. 908-HH
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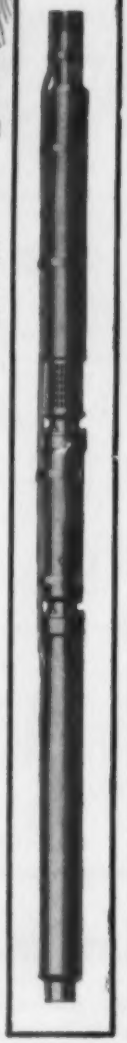

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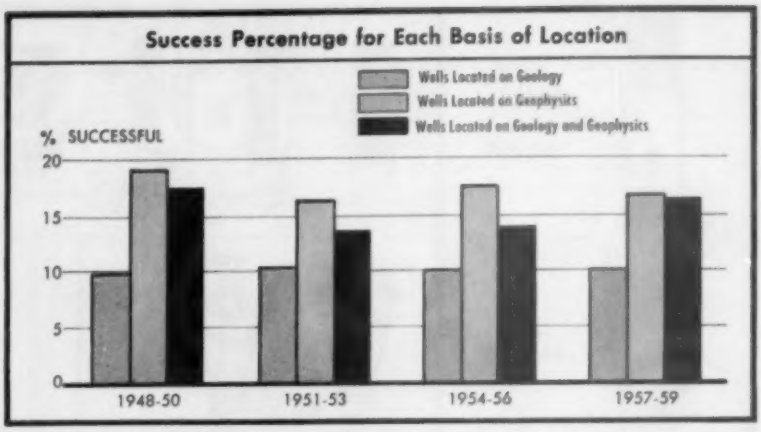

GEOPHYSICS has the highest success percentage of three technical methods used.

the highest success percentage of wells located on a technical basis.

Locations based on geophysics alone declined from a high of near 19% to a low of 16% in 1951-53, then rose slightly (chart, above).

Locations based on geology alone averaged about 10% successful throughout the 12 years, Blanpied's study shows. The method had a high of 10.60% and a low of 9.38%.

The combination of geology and geophysics had a success percentage ranging from a high of more than 17% in the first period to a low of near 14% in the 1953-55 period.

Log Research Takes $10-Million

The oil well services industry is spending nearly $10-million a year to develop new logging tools, as part of its efforts to provide better products and services to oil men.

This is one of the highlights brought out during a four-man panel discussion of "The Economics & Recent Developments of Well Services," at the annual meeting of the eastern district of the API Division of Production last week in Pittsburgh.

The specific dollar figure was used by James M. Bird, Birdwell division of Seismograph Service Corp., who said that new tools evolved by this research must be evaluated and utilized where a saving can be realized.

"In these days when every company, big and small, is taking a long, hard look at all of its operating costs," Bird said, "it is certainly appropriate that expenditures for wire line services be examined carefully."

And, he noted, according to a summary collected by his company the average cost for logging and perforating adds up to only 2.4% of total well cost.

The experience of well servicing companies in logging, fracturing, perforating and other jobs will provide "definitely rewarding results."

That was the opinion of B. E. McCann, Dowell division of Dow Chemical Co. "Service company engineers, who have the experience and know-how, make their recommendations on the basis of what type of treatment will provide the greatest return," McCann said. "Such service companies have a very real interest in seeing to it that their stimulation treatments prove profitable to the operator. They should be fully utilized, not merely for their working equipment and on-the-job labor, but as competent and 'interested' consultants."

He was backed up by Bird, who said that oil companies could effect great economies by getting more of the information already available in logs and putting it to work.

W. P. Baker, Schlumberger Well Surveying Corp., summed up by noting that a sound logging program is insurance against overlooking potentially commercial zones. "A pay missed," he said, "could easily result in loss of revenue greater than the cost of all the logs an operator might ever run."

And William W. Ball, division engineer for Halliburton Co., pointed out that one of the most pressing needs today is to get a better understanding of what research in well services has already provided, and put it into practice.

"If we would do this," he said, "I'm sure we would find that a large number of our problems are already solved."

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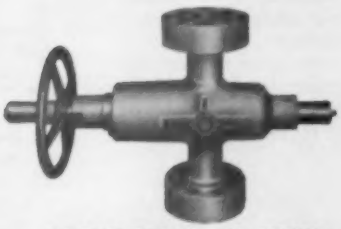

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Mining and Ore Disposal Complicate

The materials-handling aspects of mining and the disposal of tailings may prove tough barriers to economic development of Alberta's Athabasca tar sands.

Heretofore, discussion of the economics of oil sands development has generally centered on the various extraction processes devised.

The new obstacles came to light during a recent hearing before the Alberta Oil & Gas Conservation Board.

A four-company team of U.S. and Canadian oil companies—Cities Service Athabasca, Inc., operator, Imperial Oil Ltd., Richfield Oil Corp., and Royalite Oil Co., Ltd.—said the difficulties were uncovered during a pilot-plant research program in the Mildred Lake region.

The group appeared before the board in opposition to an application by Great Canadian Oil Sands, Ltd., for a permit to launch a $110-million development project on a 4,000-acre lease adjoining the team's acreage (PW—Jun.3'60,p25).

The team later requested approval to continue its research and testing program. Pan American Petroleum Corp. also has requested permission to conduct in situ combustion experiments in the area (PW—Jul.22'60, p25). Hearings on both applications will be held Aug. 17.

Results of the research program being conducted by the four-company team in the Mildred Lake region show that further study is necessary to solve the problems.

The team is convinced that the tar sands cannot be developed successfully until more research turns up economic solutions to the problems.

The companies have invested more than $9.5-million in seeking a commercially practical process for development of the tar sands, and currently are spending at the rate of $3-million a year on further research and development work.

R. W. Hardy, of Structural Engineering Service, Ltd., was the team's spokesman at the hearing. Hardy emphasized that, while extensive research has been done over the past 40 years on development of separation processes, very little has been done on the materials-handling problems, involving the actual mining of the sands and the disposal of tailings (refuse ore).

The research program by the team shows that roughly one cubic yard of material must be mined to produce one barrel of oil, which leaves close to one cubic yard of tailings to be disposed of for each barrel of oil extracted.

LIMESTONE AND SHALE pile is part of material mined by four-company team in Athabasca's tar sands during recent pilot operations. Note size of boulders.

For commercial production of 30,000 b/d of oil (Great Canadian wants to produce 31,500 b/d), says Hardy, 30,000 cu. yd. of material must be mined, and 30,000 cu. yd. of washed ore disposed of each day.

The team also has concluded that the experimental bucket-wheel excavator used to mine the oil sands will not operate satisfactorily from a bench (working roadway).

A Krupp excavator is used by the team to mine the bituminous sands. This German unit has six buckets fastened to a wheel, which rotates against the sand face. The buckets dump their loads on a conveyor belt, which transfers it to an extraction unit (picture). The experimental unit has a capacity of 9,600 cu. yd. of material per day (PW—Jan.15'60,p9).

The excavator has been used periodically during the past year on a tar-sand face 165 ft. in vertical height, some 500 ft. in length, and on a natural slope of 18 degrees.

A bench 100 ft. wide was cut into the face, and the excavator was operated from this bench.

Comparatively soft pockets were encountered in the body of the tar sand at Mildred Lake, Hardy said. Experience has shown, further, that upon exposure to above-freezing temperatures, the tar sand undergoes a gradual reduction in strength, which is accentuated by the passage of equipment over the material. During warm weather it rapidly deteriorates to a soft mass of sand and bitumen on the bench surface.

These soft pockets, and the deterioration in strength, have forced the Cities Service group to the conclusion that an excavator cannot be operated satisfactorily on the tar sand.

The research program also has shown that there is much more limestone and shale in the oil sands than originally believed.

Hardy reported that the quantity of isolated hard limestone rocks and boulders, as well as the percentage of hard layers and shale and siltstone in the body of the oil sands, "greatly" exceed the estimates made from test borings.

These recoveries are now considered to be a much more serious problem to an economical commercial operation of the sands than was first believed.

While the limestone and shale are

Tar Sands Development

WHEEL EXCAVATOR does not work satisfactorily from "bench" cut through sands.

HEAVY FILL was needed for this roadway and pilot installation by the Cities Service group to carry out its oil-sands development research in the Mildred Lake area.

still only a very small percentage of the total sand body, the equipment and plants must be adapted to handle the quantities and sizes encountered. Some of the limestone boulders exceed 3 ft. in length and 1 ft. in diameter—too large to be handled in test runs with the excavator.

The team effort also has led to a new program of research to determine the shearing-strength characteristics of tar sand.

The program is now under way at the University of Alberta and at Mildred Lake. Work to date has shown a range in shearing strength from as low as 2 psi. to a maximum of 1,500 psi., over the range of temperatures and exposure conditions known to exist at Mildred Lake.

The new research effort was initiated when it was discovered that the shearing resistance of the tar sand on a freshly exposed face was much greater than was indicated from the few pilot tests using a plow on a bench. As a result, it was found that more power is necessary than was originally estimated by the group's own technical people, as well as by the staffs of the excavator suppliers.

The big problem with tailings: If the materials are rounded and have uniform size, they will flow if deposited hydraulically or dumped loosely in a wet condition.

It may be possible to deposit such tailings on fairly steep slopes (up to 30 degrees), says Hardy. But, he warns, subsequent flow slide may develop in such deposits, whereby the whole pile of tailings would suddenly become unstable and flow as a heavy fluid mass.

"There is a history in mining operations in many parts of the world of the development of catastrophic slides of this nature," he added.

Hardy said that sand particles comprise some 80% of the volume of the Athabasca oil sands. He said these particles are well rounded and of uniform size, approximately 60-mesh.

Hardy added that the tailings-disposal problem is further complicated by the fact that no separation process, so far as he knows, turns out completely clean sand. There is always a residue of oil left on the sand particles after processing, he said. This further aggravates the stability problem because the oil film acts as a lubricant.

The problem may be complicated even more if the sand tailings contain appreciable percentages of fines and associated oil.

Hardy said that the 5% of the solids fraction that is essentially silt and clay is very difficult to take out of suspension in water. Reason: The fines will not settle in water to a concentration below three or four times as much water as solids, he said. Volume of the fines slurry, therefore, is several times greater than the available voids in the washed sand.

Hardy said the experience gained from the pilot plant operation shows that this slurry will not filter through the sand because it plugs the surface very quickly.

And the effluent cannot be permitted to escape into the river because it would carry some oil, he continued. It also could not practically be stored in basins, due to its volume.

He noted that team researchers had visited large tailings-disposal operations throughout the world in an effort to come up with a feasible solution. But, he said, there appears to be no previous experience in the disposal of tailings with these characteristics and in the large volumes that would be involved in a commercial tar sands operation.

There is some disagreement, however, over applicability of these problems to all areas of the Athabasca oil sands.

Counsel for Great Canadian testified that there were no chunks of limestone or boulders encountered on the company's lease No. 4, such as reported by Hardy.

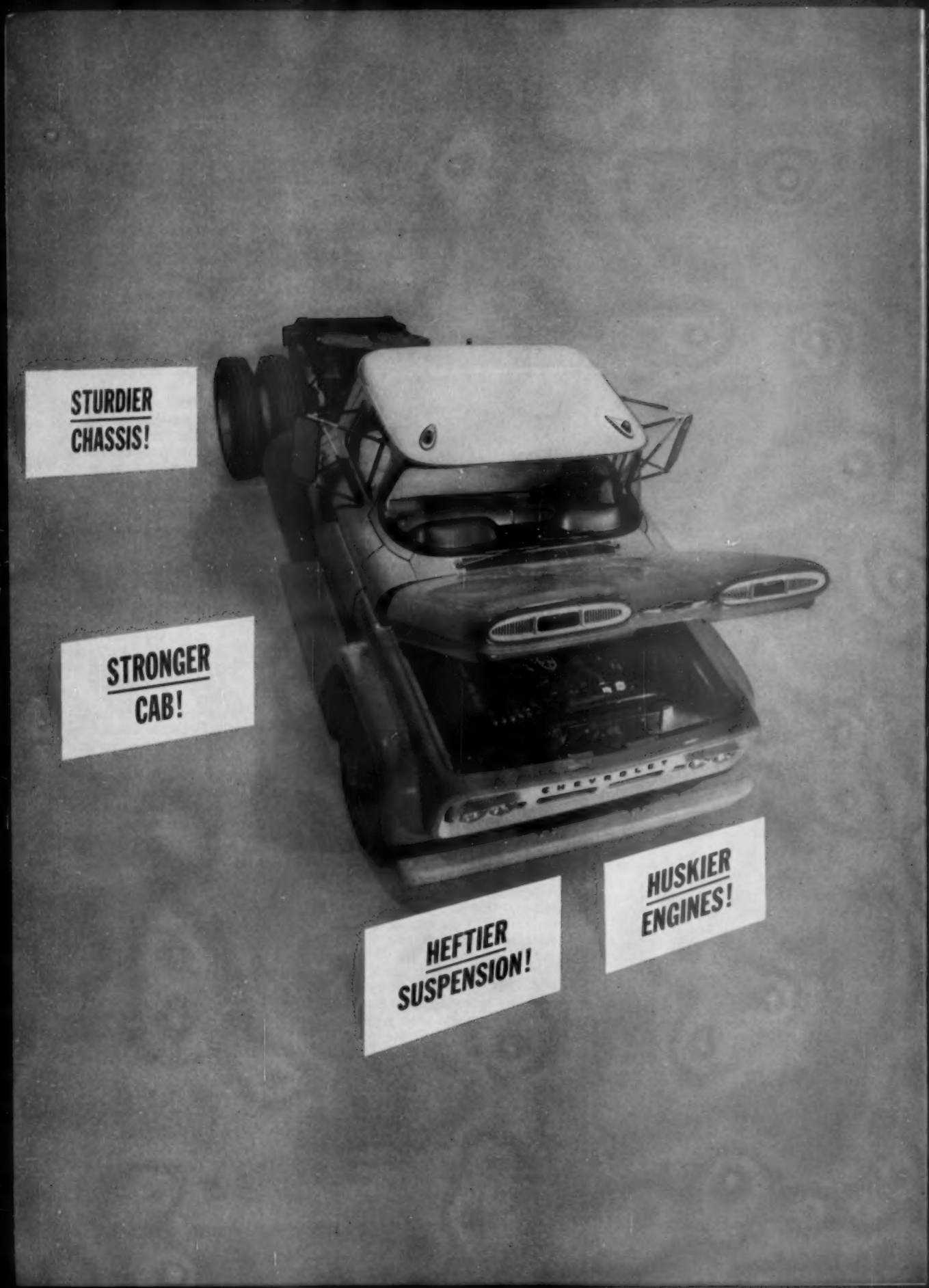
K. A. Clark, former head of the Oil Sands Section, Research Council of Alberta, said the team's lease was in a disturbed area where a slide had occurred in past times. Thus, he added, conditions encountered by the team do not mean that the same conditions would apply elsewhere.

Some geologists contend that the sand particles are angular or subangular, and not rounded.

B. V. Massie, representing Great Canadian, said two consulting geologists disputed Hardy's statements that the sands were "well rounded." Hardy replied that it was a matter of semantics, and that the crucial factor was the uniform size.

The problems that remain to be solved were said to be not insurmountable, and solvable "for a price."

Hardy explained that, as of now, 15¢ per cu. yd. of sand is the maximum estimated cost of a tailings-disposal system, and that it would cost a minimum of 7¢ or 8¢ a cu. yd. right now. He said compaction, which would be less costly, might be the answer.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That kind of performance has been Chevy's stock-in-trade for years; and the '60's are designed to put out even more of it. Next time you're in the area, drop by your Chevrolet dealer's. Find out for yourself why more truckers than ever before are getting more work and earnings out of Chevrolet trucks. And make sure you *test drive* a '60 Chevy. You'll wonder how you've managed without one! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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In Permian Basin . . .

New Mexico Discoveries Spur Interest

Four widely scattered deep oil and gas discoveries in southeastern New Mexico are providing most of the excitement in the Permian Basin these days.

Lea and Eddy Counties dominate basin activity with an average of 55 rigs active. This compares with a 260-rig count for the entire Permian basin.

Interest in the area is further reflected by the state's recent sale of oil and gas leases. Shell Oil Co. made a verbal bid of $30,000 for 160 acres in Lea County, 8 mi. west of Tatum. Pure Oil Co. turned in a sealed bid of $36,692 for 366 acres 15 mi. southwest of Tatum.

The latest is Union Oil Co. of California's Wolfcamp (Permian) lime discovery in west-central Lea County.

The No. 1-33 Union-State, section 35-15s-32e, was completed for 1,224 b/d of 40-gravity oil through 30/64-in. choke and perforations at 9,952-80 ft. Gas-oil ratio was 1,550 to 1.

The discovery is 1½ mi. northeast of Pennsylvanian production in the Anderson Ranch pool.

Ohio Oil Co.'s No. 1 Lea Unit, 2½ mi. southwest of the Pearl (Queen) pool, was completed recently as a Devonian discovery. It flowed 516 b/d of 55.7-gravity oil, and 10 b/d of acid water, through an 8/64-in. choke and two sets of perforations between 14,347-89 ft. There were also oil shows in the Bone Springs, Delaware, and Bend formations.

Also completed recently was Shell Oil Co.'s No. 1-36-B State, a deep discovery located in the shallow Jalmat field.

The Ellenburger discovery had a calculated open flow of 61.6-million cf/d of gas from perforations at 12,730-866 ft. While being drilled, the test also flowed gas from an unidentified zone at 8,843-63 ft., and had a show in the McKee at 12,580-626 ft.

The fourth deep discovery in Lea County is Continental Oil Co.'s No. 6 Bell Lake Unit, 4 mi. south of Bell Lake field. It was potentialed from the Devonian at 14,568-829 ft. for 30.5-million cf/d of gas.

Earlier, two gas wells were completed in Eddy County.

Ohio Oil Co. No. 1 Andrew Armquist-State, in central Eddy County, was completed for a calculated open flow of 545-million cf/d of gas. Production was from the Bend (Pennsylvanian) through perforations at 9,060-84 ft. and 9,092-120 ft.

The other discovery was Gulf Oil Corp. No. 1 Estill, 16 mi. south of Carlsbad. It flowed 47-million cf/d of gas, plus 4 bbl. of condensate per million cu. ft. of gas, from the Atoka (basal Pennsylvanian) at 9,806-16 ft. Gulf currently is drilling an outpost well.

Another deep prospect is yet to be completed in Lea County. It's Austral Oil Co.'s No. 1 State, which reportedly flowed 11 bbl. an hour plus some water from the Wolfcamp at 8,750-75 ft. and 8,812-75 ft., and 130 bbl. of 46-gravity oil in 28 hours through perforations at 10,156-206 ft. in the Pennsylvanian.

The wildcat is 1½ mi. southeast of the Mescalero field.

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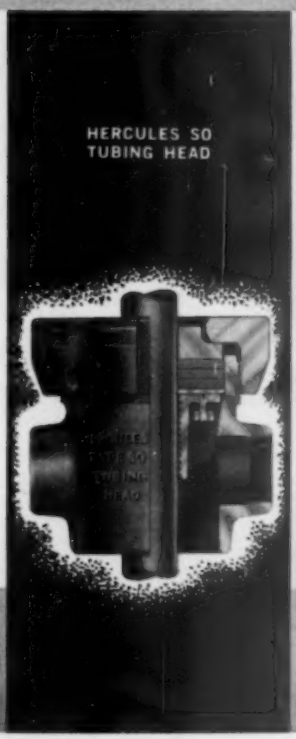

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Texas, Louisiana Get Gas Processing Plants

Three gas processing plants—one completed, one started, and one proposed—made news in Texas and Louisiana last week.

The completed plant is the CATC Group's (Continental, Atlantic, Tidewater, and Cities Service) $1.3-million absorption-type gasoline facility at Grand Chenier, La. The plant, said to be the largest of its type in the country, has an initial daily capacity of 175-million cf/d of gas. Gas to be processed will come from CATC's East Cameron and West Cameron fields.

Standard Oil Co. of Texas has started construction of a gas processing and condensate stabilization plant 3 mi. north of Kermit, Winkler County, West Texas. The facility, designed to handle 35-million cf/d of gas, is scheduled for completion Nov. 1.

A gasoline plant capable of handling 20-million cf/d of gas will be started Aug. 15 in Azalea field, Midland County, West Texas. The facility, to cost $750,000, will be jointly owned by Odessa Natural Gasoline Co. and Warren Petroleum Corp.

•

Swan Hills Parcels Top Alberta Lease Sale

A total of $7,228,013 was paid for oil and gas leases covering 27,164 acres in the July 26 sale in Alberta.

Seven 320-acre leases in the Swan Hills area accounted for $3,362,357 of the total, Pan American Petroleum Corp. and British American Oil Co. Ltd. jointly paid $2,709,049 for six of the Swan Hills parcels. The total paid by the team included one bid of $901,001, highest in the sale.

Fourteen Pembina leases covering 6,876 acres brought approximately $1,960,000.

•

High Texas Court to Hear Disposal Damage Claims

The liability of an oil lessee for unintentional damage resulting from following usual drilling practices will be considered by the Texas Supreme Court this fall.

The court set hearings in October for two cases involving liability of oil companies for damaging fresh water sands by using disposal pits.

In both cases, the operators held leases permitting disposal pits, among other things. The landowners claimed negligence in disposing of the salt water damaged their property permanently. One case involves a 155-acre Lubbock County farm, the other a Fisher County ranch.

Lower courts held for the landowner in both cases, but an appeals court reversed the Fisher County award of $37,070 on the ground the jury tried to require payment for declining oil production as well as for salt-water pollution.

•

Texas' appeal from a trial court's decision that the "severance beneficiary" natural gas tax is unconstitutional will be heard by an appeals court Nov. 30.

Approximately $7-million has been paid under protest since the tax went into effect Sept. 1, 1959, by the more than 100 companies filing suits for refunds.

•

The Interior Dept. believes potash in the Cane Creek area of southeastern Utah is more valuable than the oil and gas found there.

As a result, the department plans to withdraw 9,455 acres in the region for a period of ten years or more. The withdrawal will not affect existing oil and gas leases. When these leases expire within the next five years, however, they will not be renewed under the new plan.

The acreage is in townships 26-27 south and ranges 20-21 east. Several wildcats drilled in the area had oil or gas shows, but none were completed commercially.

•

Exploratory drilling may be resumed this fall in North Carolina despite recent failures.

State geologist Jasper L. Stuckey said three tests drilled several weeks ago in the Bladen Forest area of Jones and Onslow Counties proved dry. He added, however, that Peter Henderson Oil Co., which drilled the dry holes, plans to return to the state for another try. The dry holes raise to 35 the number drilled in the state, without success, so far.

•

The James C. Ellis estate in Kentucky has sold the oil interests on 1,712 acres of Daviess County land for $1,054,687.

The sale had to be approved by a circuit judge because of pending litigation against the will of the late Owensboro millionaire.

The buyers are Kenneth R. Ingle and Ralph C. Halbert, Evansville, Ind.; R. B. Potashnick, Cape Girardeau, Mo.; and Leo A. Fisher, Sikeston, Mo.

•

Honolulu Oil Corp. has announced it will investigate the possibility of selling its properties.

L. A. Cranson, president, said in a letter to stockholders last week that several companies have "expressed interest in this matter." He added that no decision is likely for at least six months.

•

Texota Oil Co., Denver, will acquire Basin Oil Corp., Evansville, Ind., through an exchange of stock, subject to approval by Basin stockholders.

Directors of both companies have approved the plan, whereby the acquisition would be effected through exchange of one Texota share for each three and a half shares of Basin outstanding. Basin stockholders will vote on the proposal at a special

No Offshore Texas Leasing This Year

Lease offerings of submerged lands off Texas aren't expected this year, says state land commissioner Bill Allcorn.

It was believed earlier that the U. S. Supreme Court ruling upholding Texas' claim to its three-league offshore boundary might result in leasing by late this year.

Allcorn added that 70 permits for geophysical exploration off the Texas Gulf Coast have been issued this year.

meeting to be held "as soon as possible."

•

Stanton Oil, San Antonio, has acquired a partially developed tract of 2,350 acres in Cochran County, Texas, from Atlantic Refining Co.

Stanton plans an extensive development program in the area. The acquisition was a combined purchased and farmout deal.

•

Husky Oil Co. has become a subsidiary of Canadian Husky Oil Ltd.

Canadian Husky has acquired 87% of Husky Oil through a stock exchange plan, whereby eight shares of the Canadian firm's common stock were exchanged for each nine shares of Husky stock. Operations will be integrated immediately.

•

Drilling Highlights

Utah—Pure Oil Co. No. 2-C Northwest Lisbon, section 3-30s-24e, San Juan County, flowed 299 bbl. of oil on 5-hour test of the Paradox (Pennsylvanian) at 5,844-6,132 ft. The new prospect is a north extension to Lisbon pool, where the discovery produces oil from the McCracken (Devonian). It also had shows of gas in the Mississippian. Later wells have been completed from both these formations. Pennsylvanian is the productive formation in the Aneth area, some 60 mi. south. It also has been found at Big Flat, 35 mi. northwest.

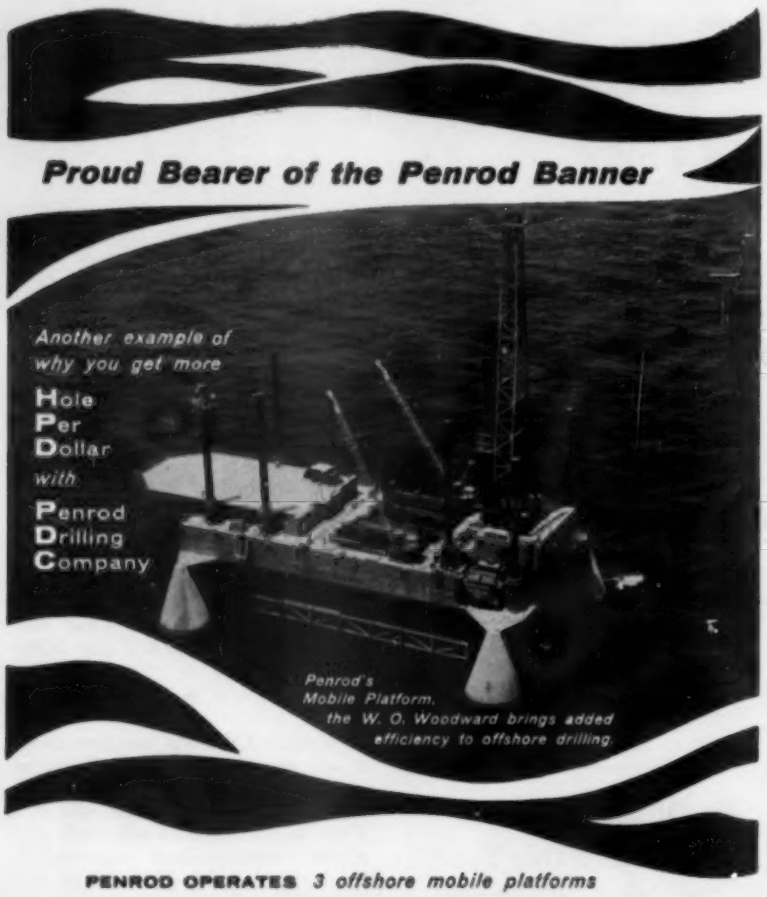
Wyoming—Raymond I. Smith No. 2 Mickelson Creek unit, section 29-32n-114w, Sublette County, flowed oil at the rate of 20 bbl. per hour on test through perforations at 3,536-49 ft. in the Mesaverde. The prospect is 14 mi. northwest of Big Piney pool. Pan American Petroleum Corp.'s No. 1 Mickelson Creek unit, 1 mi. northwest of the Smith test, swabbed up to 35 b/d of oil in 8 hours through Mesaverde perforations before it was abandoned.

Texas Gulf Coast—Sinclair Oil & Gas Co. et al No. 6-B J. A. Vickers, J. A. Vickers survey, A-52, Hardin County, a triple discovery, flowed 1,150,000 cf/d of gas with a spray of condensate through 8/64-in. choke and perforations at 6,681-86 ft. in the Yegua 2-A; flowed 145 b/d of 49.9-gravity oil through 8/64-in. choke and perforations at 6,941-48 ft. in the Yegua 4-B; and flowed 900,000 cf/d of gas through perforations at 7,342-48 ft. in the Yegua 7-A. The triple pay opener is 1½ mi. west of North Silsbee field.

Kansas—J. M. Huber Corp. No. 1-C Keller, section 22-32s-18w, Comanche County, was dually completed for 3,680,000 cf/d of gas through perforations at 5,162-72 ft. in the Mississippi, and flowed 289 b/d of oil and 4,750,000 cf/d of gas through perforations at 5,652-69 ft. in the Viola. The dual opener is 8 mi. northwest of the Beals pool.

West Texas—General American Oil Co. No. 1-A-63 Koonsman, section 63, block 6, H&GN survey, Garza County, was completed for 505 b/d of 40.6-gravity oil, based on 8-hour flow of 168.36 bbl. of oil through ¼-in. choke and perforations at 7,930-50 ft. in the Strawn reef. The opener is 1½ mi. northeast of Cain pool.

In Crane County, Gulf Oil Corp. No. 1 State-McElroy unit, section 12, block 30, University Lands survey, flowed 389 b/d of 38-gravity oil and 63.5 b/d of salt water through 16/64-in. choke and perforations at 10,650-740 ft. in the Devonian. Nearest Devonian production is 7 mi. northwest, in the University Waddell pool.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Emulsion (2 week average)	177	$409.76	$—0—	$74.03	$483.79
Bit Lube and Emulsion (3 week average)	52	120.38	122.43	8.25	251.06

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WORTHINGTON

Polyesters Gain as Corrosion Foe

A major breakthrough is expected in the use of corrosion-resistant plastic materials for the construction and maintenance of refining and processing equipment.

Considerable interest is now being expressed in these materials by the National Assn. of Corrosion Engineers, as well as by corrosion specialists in the oil and the chemical industries.

The uses of such materials can be broken down into several categories:

- Construction of all-plastic, glass-reinforced equipment, such as storage and pressure tanks, hoods, and ducts.
- Plastic lining of metal, wood, or concrete equipment.
- Corrosion-proof flooring compounds.
- In-plant repairs of damaged equipment, such as storage tanks, pipelines, stacks, and towers.

Both glass-reinforced liquid resins and various types of putties are used for this last application.

In refineries, these plastic materials have heretofore been used principally for maintenance purposes.

For example, a leaky depropanizer shell was repaired early this year with a plastic resin and three plies of glass mat, at a cost of $800.

Replacing the metal jacket would have cost $8,000.

"In the petroleum industry," says Dr. George O. Rudkin, assistant director of products development at Atlas Powder Co., "the current major use of these plastics is for in-plant repairs. In other industries, it is for new, all-plastic equipment, and the lining of metal containers with corrosion-proof reinforced plastics.

"The reason may be that major refiners have well-equipped and trained maintenance crews, that are easily educated to handle the new techniques. The plastic fabricators have not yet broken into the well-established sources of design and supply of complex refinery equipment."

Outstanding among these plastic materials are the polyester resins, the most common of which are the general-purpose polyesters.

These result from the reaction of maleic or phthalic anhydride with aliphatic glycols, such as propylene glycol.

Some 1¼-million lb. of polyesters were used for the fabrication of corrosion-resistant equipment in 1959. Rudkin predicts that over 4½-million lb. will be used in 1963.

Another type of polyester used for corrosion control is isophthalic resin, manufactured by Oronite Chemical Co.

The reaction of glycols with isophthalic acid, instead of phthalic anhydride, changes the position of the acid groups in the benzene ring of the polyester molecule. Oronite says this imparts to the resin greater strength and anticorrosive properties.

And a new bisphenol A polyester combines many of the properties of general-purpose polyesters and of epoxies.

These polyesters, made by Atlas, are based on the reaction of maleic or fumaric acid with a glycol derived from bisphenol A, one of the ingredients of epoxies. Atlas recommends use of these polyesters where great corrosion resistance is required.

Their cost is intermediate between that of isophthalic polyesters and that of epoxies.

Tests recently concluded with various polyester resins in eight corrosive aqueous solutions have contributed substantially to the knowledge of the behavior of these products.

These tests were conducted in the Atlas laboratories, and disclosed some interesting results. Among them:

- A resin may withstand a drastic immersion period in a corrosive liquid but may deteriorate later, as a delayed result of that exposure.
- Special-purpose resins, such as isophthalic and bisphenol A polyesters, show substantially greater resistance to corrosion than the general-purpose varieties.

Less Paperwork, More Efficiency

A new filing system has recently been installed to improve preventive maintenance and cut down paper work at the Richmond (Calif.) refinery of Standard Oil Co. of California.

This is a 160,000 b/d refinery employing 3,500 people. Keeping repair and maintenance records on its 15,000 pieces of equipment used to be a tedious job. It involved bulky files of work orders for every piece of equipment, and it was difficult to locate the file pertaining to any one item, when needed.

The new system is based on Remington Rand's Kardex and Linedex files (picture).

The essential feature of the system is a cross-index, which quickly tells where an item is located, and a signal system to point out when the next maintenance check on each item is due. Each piece of equipment has its own record card, on which it is fully identified. That card bears the detail of every repair done on the item.

Cards for all similar pieces of equipment—pumps, compressors, vessels, and so forth—are filed together.

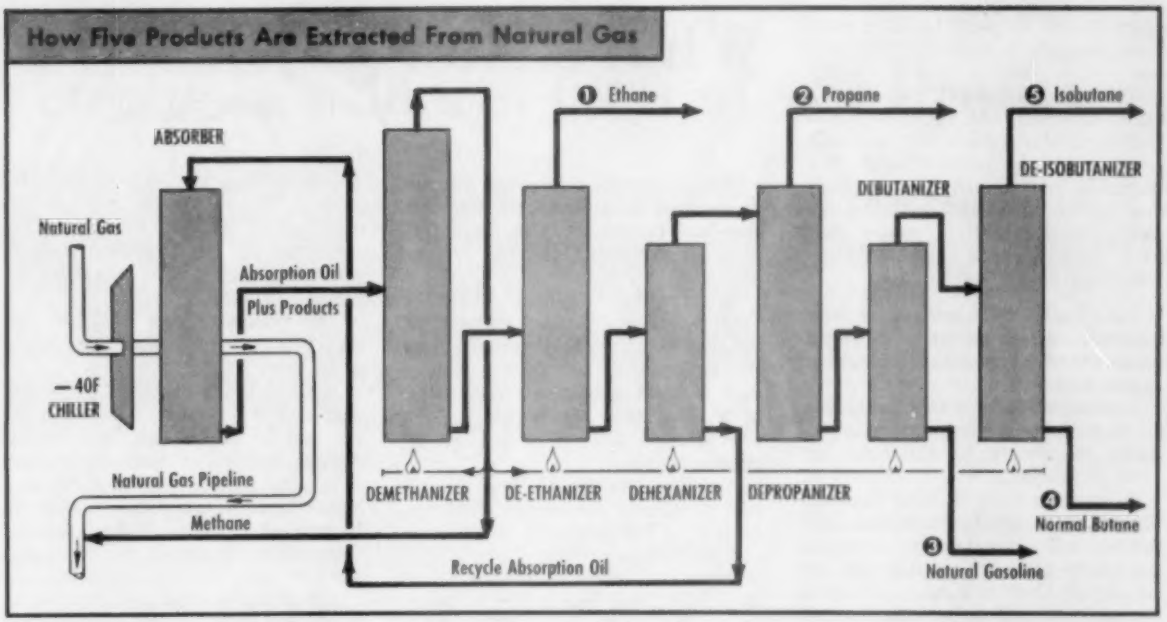
Then there is Lindex cross-record which lists together all the equipment in each process.

The signal system makes use of colored tabs in a visible margin: Orange shows the time of the last repair; green shows the month when further attention should be given.

RECORD-KEEPING at California Standard's Richmond refinery is simplified with Remington Rand's Kardex (right) and Linedex (left).

The new system has proven itself invaluable in cutting down and sometimes even eliminating unscheduled downtime in the refinery, California Standard says.

As a plus value, it supplies a convenient history of all the equipment. This feature has great value as a guide for future purchases, based on the performance record of the various types of equipment already in operation.



Extraction Plant's Capacity Is Doubled

The capacity of the Eunice (La.) natural gas extraction plant is being enlarged to 800-million cf/d, twice its 1959 capacity. This will make it the second largest plant of its kind in existence, the operators say.

The plant is owned and operated jointly by Texas Gas Exploration Corp., subsidiary of Texas Gas Transmission Corp., and Runnels Gas Products Corp., subsidiary of Union Texas Natural Gas Corp. It was placed on stream in December, 1957, with a capacity of 300-million cf/d. It was increased for the first time in 1959, to 400-million cf/d.

But the demand for gas and for LPG products is increasing daily throughout the U.S. Texas Gas Transmission is currently moving 600-million cf/d of South Louisiana gas, and this is expected to increase to 800-million or more by 1965.

The new expansion includes a substantial amount of new extraction equipment. The plant will get:

- Additional processing vessels.
- An additional gas compressor for pipeline pressurization.
- A new gas-fired turbine to drive a 10,000-hp. centrifugal compressor for the refrigeration process.

The storage capacity of the Eunice plant will be boosted to over 2.8-million gal.

Five products are extracted from natural gas at Eunice before the gas flows to consumers through the Texas Gas main line.

The gas is first chilled to —40F. Then all the products that are to be extracted are absorbed by a light absorption oil, which is also chilled, for greater efficiency.

There follows a succession of fractionating towers, where separation of the products from the oil takes place at various temperatures, up to 400F (diagram, above). The separators are:

- A demethanizer, which removes the portion of natural gas (methane) that has been absorbed by the oil along with the other products. Some of this gas is used as fuel; the rest is returned into the natural gas line.
- A de-ethanizer, which removes the ethane, a gas of great value as a petrochemical intermediate.
- A dehexanizer, where the rest of the products are removed from the absorption oil, which is then recirculated to the absorption tower.
- A depropanizer.
- A debutanizer, which separates isobutane and normal butane from the natural gasoline.
- A de-isobutanizer, which separates the isobutane from the normal butane. The latter serves in the making of butadiene—an important component of SB-R synthetic rubber—and also as a blending agent for motor fuel, and as a part of LPG, mixed with propane.

The isobutane is used for the preparation of alkylate, a blending stock for aviation gasoline.

More Chemicals from Agriculture

A return to agricultural and animal sources as raw materials for some chemicals that are now being produced for oil and natural gas is predicted by Richard P. Windisch, chemical consultant, in the Statistical Comparison of Chemical Stocks, a booklet that is being distributed by W. E. Burnet & Co., New York, financial brokers.

The reasons for the spectacular rise of petrochemicals in the past 20 years, Windisch says, have been:

- The scarcity of farm products during the war years, and their high prices in the years following the war.
- The availability of raw materials from oil or gas which contain building blocks for valuable chemical intermediates, especially for production of synthetic rubber, and which were being wasted as fuel.
- The low labor factor involved in production and refining of petroleum, a serious advantage during the manpower shortage of the war years.

These conditions created an economic advantage in favor of petrochemical raw materials.

Today, the growing spread between the price indexes of agricultural and industrial products indicates greater

opportunities for profit by using more farm products in industry, Windisch says.

Increased tonnages of low-cost consumer products and intermediates—such as rubbers and plastics—may still be expected from petrochemicals. But vegetable and animal raw materials may reenter such fields as detergents and protective coatings, where they have recently been supplanted by petroleum derivatives, he says.

Two low-cost nonpetroleum raw materials offer particularly bright prospects for chemical utilization: sugars and fats.

Raw sugar, available at prices as low as 3¢ a lb. and tallow, at 5¢ a lb., could conceivably be the basis for tonnage chemicals.

In addition to the leading chemical companies, the meat-packers, especially Armour & Co., are doing an outstanding job of chemical research and development. Over 40% of Armour's investment, Windisch indicates, is now in non-food facilities.

Chemicals made from farm products could never hope for the price stability enjoyed by petroleum-derived organics, Windisch points out. To offset this, however, they should, in peace time, enjoy abundant sources of raw material.

What's New / IN PROCESSING

IBM is currently conducting a series of seminars to acquaint refiners and chemical processors with its latest program, the Unit Operation Simulator (UOS).

International Business Machines Corp. has available small packages of punched cards, each of which covers the typical operation of one unit—such as a heat exchanger, a flash tower, or a distillation tower—which is a conventional part of a refinery or chemical plant.

By adding to the UOS package a card containing the specific data pertaining to his own unit, a processor can obtain—on an IBM 650 or a 1620 computer—a complete breakdown of data, which will enable him to adjust his process for maximum efficiency.

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Two plants for producing commercial quantities of naphthalene from petroleum will be built at Toledo, Ohio, and Ashland, Ky.

Sun Oil Co.'s proposed unit at its Toledo refinery has been designed to produce 100-million lb. per year of naphthalene. M. W. Kellogg Co. is contractor for the $8-million project, which is expected to be completed by the end of 1961.

The company says 80% of the plant's production capacity is already under contract.

Ashland Oil & Refining Co.'s Hydeal unit will product 75-million lb. per year of naphthalene and several million gallons of benzene. Badger Mfg. Co. is constructing the plant, and Universal Oil Products Co. is licensor of the new Hydeal process. Completion is slated for February, 1961.

These plants—and one planned by Tidewater Oil Co. and Collier Carbon & Chemical Corp. (PW—Jun.24 '60,p86)—are the first to be built for the production of naphthalene from petroleum.

•

Humble Oil & Refining Co. is increasing production of orthoxylene at its Baytown (Tex.) plant to compete with naphthalene in the phthalic anhydride market.

Capacity will be increased from 44-million to 72-million lb. per year by the end of 1960, and eventually to 165-million lb. if demand increases sufficiently.

Enjay Chemical Co., Humble's marketing division, reports that shortages of naphthalene in recent months have turned many phthalic anhydride producers to orthoxylene to supplement their raw material supply. It believes it can continue to sell this market at prices that will compete with those of napthalene.

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An International Institute of Synthetic Rubber Producers is in the process of formation, with its main office in New York and a subsidiary office in Europe.

Bancroft Henderson, former president of American Synthetic Rubber Corp., is the Institute's managing director.

It is believed that this is the first organization grouping the producers of synthetic rubber from all over the world. The needs are many, within the industry, for the formation of committees on packaging, standardization, and on many other industry phases.

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Venezuela's Share: 69% of Oil Profits

CARACAS—The Venezuelan government took 69% of oil industry income last year, leaving the oil companies with only 31%, according to preliminary figures of the Ministry of Mines & Hydrocarbons.

That compares with a 65-35 profits split in 1958, when income taxes were hiked sharply. During the previous 11 years, the government's share of oil income ranged between 52% and 60%, excluding concession payments.

The fiscal take may go higher yet. Some oil companies in Venezuela expect to turn over 70% of their 1960 earnings to the government in the form of royalties, income taxes, and other payments.

The widening gap between the government's take and the companies' remaining profits is due to the fact that a large part of the government's share comes from royalty payments, which have held steady. The remainder of the profit has been sharply curtailed by lower prices.

In 1958, the average payment for royalty crude purchased by companies from the government was $2.55 a bbl., while average sale price of crude and products was $2.44. (The Ministry does not give an average for crude alone.)

In 1959, however, royalty payments averaged $2.47 a bbl., while the average sale price of crude and products dropped to $2.24.

Net profits of the oil industry dropped to $427-million last year, the Oil Ministry says in its annual report to Congress. That figure compares with industry profits of $523-million in 1958.

Creole and Shell together accounted for $327-million of the industry's total profits, leaving $100-million for the other 39 companies with interests in Venezuelan production.

Government oil revenues rose slightly to $972-million last year, as compared with $964-million in 1958. Of the 1959 total, royalties accounted for 54% and income taxes 41%. Import duties and other payments made up the remainder.

Average per-barrel profit on oil produced in Venezuela fell to 42¢ last year, compared with an average per-barrel profit of 55¢ in 1958 and 89¢ in 1957.

At the same time, the oil industry's return on capital investment dropped to 13.4%, compared with 17.0% in 1958 and 32.3% in 1957. Average return for the period 1947-57 was 22.5%.

The Ministry says that the low average return is partly due to "newcomers." These firms began operations in 1956-57 and have laid out $278-million—nearly 9% of the industry's total capital investment. But so far they account for less than 2% of sales, and show no profit whatever.

The oil industry's gross operating revenue declined to $2,414,000,000, compared with $2,461,000,000 in 1958, despite a 6.4% increase in crude production. The drop was due to a cut in Venezuelan crude postings.

New capital investment by the oil industry was slashed to $391-million in 1959 compared with $579-million in the previous year.

Gross accumulated investment at the end of 1959 was $5.8-billion, and net investment totaled $3.1-billion.

The number of wells drilled in 1959 was 707, including 343 development wells and 364 exploratory and semi-exploratory tests. Those figures compare with a total of 1,195 wells in 1958, including 596 development wells and 599 exploratory and semiexploratory holes.

Exploratory crew-months were nearly halved. The total last year was 211, compared with 409 during the previous year.

Sun Finds Thick Pay in Venezuela Well

CARACAS—Sun Oil has made one of the most important oil discoveries in Venezuela this year—a well with 1,558-ft. of net pay— the Oil Ministry reported last week.

The ministry said the well has the thickest pay of any in the country.

The well is in Sun's new pool, SVS-41, in the west-central portion of Block 1, Lake Maracaibo, and south of a proven area.

Oil was found in the B and C sands (Eocene) and in the Santa Barbara sand (Lower Miocene).

Sun operates on the block for a partnership that includes Venezuelan Atlantic and Texaco Seaboard.

Gulf Starts First Test, Gets New Tracts in Spanish Sahara

MADRID—Gulf Oil last week became the first oil company to test acreage in the Spanish Sahara.

The company began drilling a stratigraphic hole in its Block 10 concession in the north. It plans a series of such tests throughout its concession areas in the next few months.

Also last week, Gulf picked up four new concessions in the territory —two of which were also sought by other companies.

Gulf now holds nine blocks totaling some 8,000 sq. mi.

The Spanish government has granted Gulf and its Spanish independent partner Cepsa, the following tracts:

Block 3, which measures 940 sq. mi. and is in the north of the territory; Block 65, 486 miles along the central coast; Block 66, 970 sq. mi. adjoining Block 65, and Block 97, 995 sq. mi. in the extreme south. Block 97 also includes some offshore acreage.

Rival bidders for Block 3 were Union Oil Co. of California and its Spanish partner, Iberica. Richfield and Cities Service, in joint venture with Campsa, a company holding the government oil marketing monopoly, were the unsuccessful contenders for Block 65.

To get the Sahara rights, Gulf offered exploration guarantees well over the minimum that is required by the oil law, according to sources in the Bureau of Hydrocarbons in Madrid.

While details of the bids were withheld by authorities, it is known that Gulf revised the original bids it made last year.

Second Libya Line Set

A $40-million Libyan pipeline and export terminal is planned by the Oasis group, with participation by Esso.

The Oasis group, composed of Amerada Petroleum, Continental Oil, and Ohio Oil, last week filed a proposal for the project with the Libyan government. A government decision is expected in three to five weeks.

The 300,000 b/d pipeline will connect Oasis' Dahra field to the Mediterranean coast. The gravity flow line will be 30-in. in diameter and 86 mi. long.

The installation of pumps on the line could substantially increase capacity if an increase is needed later.

A 36-mi., 20-in. line will run from Esso's field northeast of Dahra to a junction point.

Esso, through its subsidiary, Esso Sirte, is operator on a farmout agreement with Libyan-American, an affiliate of Texas-Gulf Producing Co. to which W. R. Grace and Co. has given financial backing.

Esso is also building another pipeline east of the newly proposed one as an outlet for its wholly owned Zelten field.

Es Sider has been chosen as the export terminal site.

The port site is slightly northeast of Dahra field and some 390 mi. east of Tripoli.

Seven 300,000 b/d storage tanks will be built at the terminal. Two sea berths capable of handling the largest tankers afloat will be constructed about a mile offshore. They will be connected to the storage tanks by 42-in. feeder and 36-in. submarine pipelines capable of handling 40,000 bbl. per hour.

Construction is expected to be completed within two years.

$55-Million and Not a Drop of Oil

CARACAS—Of the $370-million spent on Venezuelan oil rights in 1957, some 15%—$55-million—went for acreage on which not a single drop of oil has been found.

Thirteen operators paid that much money for some 1¼-million acres of exploration rights in three sections of the country in 1956-57.

The results to date: 22 dry holes.

All but a fraction of this acreage has been or will soon be returned to the Venezuelan government, at the expiration of the three-year exploration licenses. Not more than 30,000 acres are expected to be retained.

The biggest disappointment came in the Barinas Basin, one of Venezuela's producing areas, where 12 dry holes were drilled in new areas.

Three years ago, three oil companies laid out nearly $23-million for some 300,000 acres of exploration rights there. The last of these rights, held by King-Mill Oil Co., was recently returned to the government after two wildcats were abandoned.

Creole Petroleum Corp. drilled six unsuccessful tests on the exploratory acreage in the basin area before giving up its rights. Venezuelan Atlantic and its partners failed on one test on its exploratory acreage.

In "obligatory acreage" along the Colombian border, the results were no better.

Bidders were required to take 880,000 acres along the border "sight unseen" in 1956-57, in amounts proportional to acreage acquired elsewhere in the country. The companies paid the government $17-million for these border rights.

While the plan was designed by the government to push development of the frontier country, only two wildcats were drilled there in the ensuing years. Both were dry.

Three companies are continuing the search in the border area.

Shell has already converted 5,000 acres to development leases in Zulia, and King-Mill Oil Co. is doing the same with 12,000 acres of its Rio de Oro tract. The conversion bonus is $13.10 per acre.

Venezuelan American Independent Oil Producers Assn. (Vaiopa) has applied for permission to convert a portion of its 23,600-acre lease adjoining the King-Mill tract. Meanwhile, Venezuelan Sun has assigned its interest in the Vaiopa block to King-Mill, subject to approval of the government.

One tract in northern Monagas has also proved disappointing. Creole paid $15-million for 72,000 acres there in 1957. It has returned the land to the government after 11 dry wildcats.

More than 1.3-million acres of both exploration and development rights have been relinquished so far this year. Another 3.6-million were turned back last year.

Total concession holdings in Venezuela have declined from 14.8-million acres at the end of 1958 to less than 10-million at present.

Arab Oil Parley May Bar Iran

CAIRO—The Arab League's boycott committee has asked that Iran's invitation to attend the Arab Oil Congress be canceled, following last week's flare-up over Iran's recognition of Israel.

(The oil congress is slated for Oct. 17-22 in Beirut, Lebanon.)

The move followed a complete breakdown in diplomatic relations between Iran and the United Arab Republic. Each country ousted the other's ambassador.

The dispute arose after Shah Mohammed Riza Pahlevi reaffirmed the de facto recognition of Israel that non-Arab Iran had first announced 10 years ago.

UAR President Gamal Abdel Nasser last week denounced the Shah, charging he had sold out to the "imperialists" for "a few more dollars of American aid."

The Iranian Foreign Minister Abbas Aram shot back at Nasser, saying the UAR president was a "light-headed pharaoh who is ruling by bloodshed."

What's New / AROUND THE WORLD

Conoco Moves Into Foreign Marketing

WEST GERMANY—For the first time in its history, Continental Oil has acquired marketing properties outside of the United States.

The company last week announced it had purchased control of Sopi Mineralprodukte, a leading West German independent oil marketer, which operates some 360 retail outlets in Germany and Austria under the Sopi trademark.

In the past, Conoco's foreign sales have been confined to petrochemicals, plus some lube oil sales through brokers.

•

Venezuela Output Off

VENEZUELA—The nation's oil production in the first six months of 1960 totaled slightly lower than in the same period a year ago.

The six-months average was 2,849,400 b/d compared with 2,852,800 b/d in the first half of 1959.

The production rate for June was down 17,000 b/d over the previous month.

Official government statistics in 000 b/d:

Company*	June '60	6-Mos. Avg. '60	6-Mos. Avg. '59
Creole	1,126.1	1,094.9	1,164.5
Shell	714.9	751.2	870.9
Mene Grande	405.2	420.8	369.9
Mobil	155.7	128.2	117.7
Texaco	53.6	56.3	52.0
Richmond	65.9	58.5	51.1
Sinclair	57.0	49.0	53.4
Sun	85.1	76.5	31.2
San Jacinto	39.1	41.3	30.5
Mercedes	16.2	16.8	31.5
Phillips	56.3	56.3	11.1
Atlantic	29.9	26.1	25.7
Signal	25.9	27.4	22.7
Superior	36.8	27.8	19.0
Talon	0.9	1.0	1.4
Caracas	10.9	8.8	0.1
Coro	8.6	8.5	0.1
Totals	**2,888.1**	**2,849.4**	**2,852.8**

**For joint ventures, total group production is listed under operator's name.*

•

Mobil Scores Again

ALGERIA—Mobil and its French partners have completed a 4-mi. stepout from the Ohanet discovery well in the eastern Sahara.

The No. 2 Ohanet flowed 38-gravity oil at the rate of 2,000 b/d on a drillstem test from a pay zone 85 ft. thick at approximately 7,650 ft.

The discovery well on the tract, on which Cie. d'Exploration Petroliere is operator, tested 2,400 b/d.

•

LIBYA—Four 268,000-bbl. crude storage tanks for Esso's export terminal at Marsa el Brega will be shipped this month.

The floating roof tanks, being manufactured by Whessoe Ltd. of England, will be erected by Chicago Bridge Ltd.

•

SPANISH SAHARA—Pure Oil and its partners will begin immediately to explore a 1,388,000-acre concession in the Spanish Sahara, the company announced last week. It was notified then that the Spanish government had approved an operating agreement.

A year-long seismic program has been planned by Pure, Champlin Oil & Refining, and Sun Oil.

•

ISRAEL—The Israeli-American firm, Lapidoth Oil Prospectors, has purchased a controlling interest in Israel Negev Petroleum Corp., also owned by Israeli and American interests.

Lapidoth paid $400,000 worth of its own shares and $500,000 in cash for 68% of Israel Negev's stock.

•

PORTUGESE TIMOR—The American firm, Tradewinds Petroleum, will spud a test well—the first in 1960—around Sept. 1, on the south coast of Timor.

Tradewinds, an affiliate of Sunset International, is in partnership with Timor Oil, Ltd., an Australian firm.

•

ARGENTINA—White Eagle International will handle a secondary recovery project in Comodoro Rivadavia field, in Argentiana.

The American company has signed a 20-year agreement with Astra Cia. Argentina de Petroleo, Argentine operator.

•

BAHRAIN—Construction of Bahrain Petroleum Co.'s new island wharf at Sitra has been started.

Part of a modernization plan to be completed by the end of 1961, the wharf will be one of two replacing an existing structure. The new facilities will permit Bahrain Petroleum to berth tankers up to 45,000 tons.

•

Oil output in five Middle East producing states jumped nearly 13% in the first six months of 1960 compared with the same period last year. The six-month average was 4,905,200 b/d compared with 4,349,600 b/d a year ago.

During June, Iraq set a production record of 996,600 b/d (PW—Jul.29 '60,p43).

The June totals, in 000 b/d:

	June '60	May '60	June '59
Kuwait	1,595.5	1,787.6	1,268.1
Arabia	1,240.4	1,223.1	1,084.8
Iran	955.0	977.0	944.0
Iraq	996.6	955.1	819.9
Qatar	172.7	149.4	168.6
Totals	**4,960.2**	**5,092.2**	**4,285.3**
6-Mo. avg.	4,905.2	.....	4,349.9

Iraq May Offer Persian Gulf Rights

IRAQ—International bids for offshore oil exploration and development in the Persian Gulf will shortly be invited by the Iraq Oil Minstry. This was announced last week by Premier Abdul Karim Kassem.

The concession for the offshore Basra area was returned to the government by the Iraq Petroleum Co. group some time ago.

Pakistan Studies Price Cut to India

PAKISTAN—The Pakistan government last week asked India for details on the reduction in Middle East crude prices made by Western companies to India.

It was clearly indicated by government officials that oil companies operating in Pakistan may also be asked to reduce their prices voluntarily (PW—Jul.29'60,p14).

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Banner Year for Gas Pipeline Growth

- **The $1,062,000,000 earmarked in 1960 for new pipeline and compressor facilities will set a new record.**
- **The industry will spend nearly $3.5-billion in the four years from 1960 through 1963, AGA forecasts.**

A record $1,062,000,000 will be spent this year for new natural gas transmission facilities, according to an estimate by the American Gas Assn.

The estimate is based on replies to questionnaires asking member companies for a report on expenditures earmarked for each year through 1963.

The new high in pipeline building is expected to stand at least through 1963, when expenditures will be $1,001,000,000, AGA estimates.

Actually, pipeline construction in 1963 will show an increase over 1961 and 1962. AGA estimates that $655-million will be spent next year, and $737-million the year after (chart).

Total expenditures for the years 1960-63 will be $3,455,000,000.

The reason for the heavy spending this year is the welter of large pipeline projects in various stages of construction.

This year's biggest pipeline project is the recently completed line of Transwestern Pipeline Co., which runs 1,800 mi. from West Texas to the Arizona-California border (PW—May 20'60,p53). Cost is estimated at over $190-million.

Among other major projects scheduled for completion before the end of this year are:

- Construction of 756 mi. of new pipeline by two affiliates of Peoples Gas Light & Coke Co., at a total cost of $74.5-million (PW—Apr.29'60,p50).
- Construction of 300 mi. of loops by Panhandle Eastern Pipe Line Co., at a cost of $60-million, and completion of the looping of its line by Trunkline Gas Co., Panhandle's subsidiary, at a cost of $45.1-million (PW—Feb.26'60,p46).
- Addition of 278 mi. of line by Texas Eastern Transmission Corp., at a cost of $64.1-million.

This year's estimated expenditure represents an increase of $370-million over the $692-million spent for new transmission facilities in 1959.

In 1958, according to a previous AGA report, pipeline companies spent $715-million, as compared with $753-million in 1957 (PW—Jul.10'59,p63).

Last year, the industry built 9,250 mi. of transmission lines to bring total mileage to 172,240. In 1958, there were 162,990 mi. built.

In addition, the industry built 2,120 mi. of gathering lines last year. Total mileage of gathering lines at the end of the year was 54,130, as compared with 52,012 in 1958.

Compressor capacity was boosted by 434,000 hp. last year.

Total horsepower was 6,046,000 at the end of last year, compared to 5,612,000 in 1958.

Net income of pipeline companies rose $16-million last year over the previous year.

In 1959 their income was $268-million, compared to $252-million in 1958, and $246-million in 1957.

Operating revenues also increased —by 352-million.

Last year, they were $2,762,000,000, as compared with $2,410,000,000 the previous year.

Revenues in 1958 had shown a gain of $294-million over revenues of $2,116,000,000 in 1957.

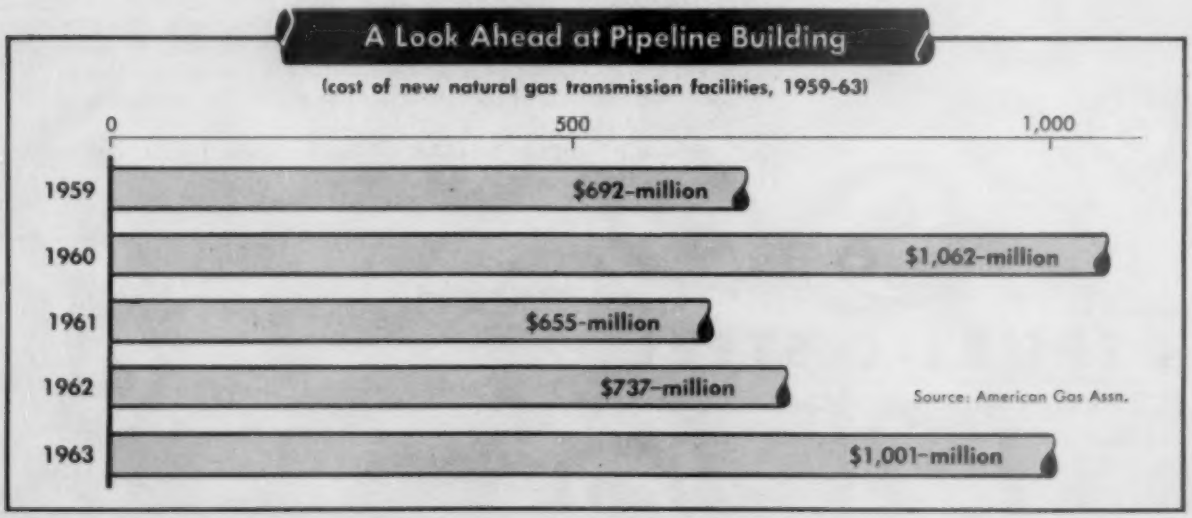
Value of gross plant recorded the biggest jump—$840-million—to $8,105,000,000 at the end of 1959.

At the end of 1958, value of gross plant was $7,265,000,000, which was a boost of $600-million over 1957.

Some 180-billion cu. ft. of capacity were added to the country's underground natural gas storage facilities last year.

Total storage capacity of such underground reservoirs is now 2.9-trillion cu. ft. (PW—Jan.22'60,p54).

Last year, $79-million was spent on development of new underground storage. This year, AGA says, $87-million will be spent.



DIESEL TRACTOR, with gear-reduction transmission, powers drive shaft to rotate . . .

Cost-Cutting Crude Churner

New economy and versatility in crude oil mixing is being achieved at Service Pipe Line Co.'s Humboldt (Kan.) pump station through use of a simple, portable diesel power unit.

The unit is being used to drive mixers of three crude working tanks at Humboldt.

Service says it may expand use of the device in the future.

Purpose of mixing crude in a tank is to break up heavy ends and basic sediments, which accumulate on the bottom and block drainage of water and other impurities.

Another possible injurious effect of excessive accumulation is that big chunks of sediment may break loose and enter the pipeline stream.

The unit consists of a standard diesel tractor, which is equipped with a special drive shaft to spin the mixer (picture).

The tractor has a Sherman gear-reduction transmission, which is capable of slowing revolutions from a standard power take-off speed of 660 rpm. to a mixing speed of 440 rpm.

The 4-ft. telescoping drive shaft has knuckle joints and connectors at each end for attachment to the tractor's power takeoff and the tank's mixing assembly.

One man can make the attachments and operate the unit.

Misalignments of up to 10 degrees between the mixer and power shaft can be tolerated.

When in operation, the drive shaft is covered by a safety shield to protect personnel.

And once the power is turned on, the unit can safely be left unattended, since it will shut off automatically if a critical temperature is exceeded or if oil pressure falls below a certain level.

Cost of the three tanks' mixing assemblies at Humboldt, plus the tractor, was $6,500, as compared with a cost of $7,000 to $9,900 for one conventional mixer.

Each mixer costs $1,000. The tractor, with all its accessories, costs about $3,500.

Conventional units cost more because each one must have its own 15-hp. to 25-hp. electric motor and its own drive mechanism.

The reason behind development of the simpler, cheaper unit is that crude mixing needs to be done only infrequently.

"Tank mixers are generally run only a few days each month, when used for controlling bottom settlings," says R. M. Carter, Service's tank superintendent.

"Our primary interest in the portable unit is to reduce investment in infrequently used equipment."

The new mixers may also be used on a different schedule than are stationary units.

Current practice is to run stationary units on a fairly regular schedule of 96 hours a month.

Service has found, however, that tank clean-outs are easier in the summer, when heavy-ends are thinner and more readily absorbed by the warmed crude stream.

The company has also learned that it takes at least a year for bottoms to reach a depth of 1½ ft. to 2 ft.—the level at which the crude must be mixed.

As a result of its findings, Service may use its new units only once a year—during the summer. (It would also use them at other times of the year, of course, if the sludge reaches its critical level.)

What's New
IN TRANSPORTATION

A 28-million gal. box-type storage tank unit for fuel oil—one of the biggest of its kind ever built—will be constructed and installed in New York City by Pittsburgh-Des Moines Steel Co.

The unit, which will contain five rectangular tanks, will be 571½ ft. long, 40 ft. deep, and 205 ft. across at its maximum width.

Construction is expected to be completed by the spring of 1961.

Owner will be Cirillo Bros., distributors.

•

A Federal Power Commission examiner has recommended authorization of a $46.6-million expenditure by Texas Eastern Transmission Corp. to enlarge its natural gas system in the Northeast (PW—Apr.22'60,p76).

At the same time, Examiner Emery Woodall recommended approval of related expansion plans of three other companies to enable them to take additional gas from TET. The companies are Transcontinental Gas Pipe Line Corp., N. Y. State Natural Gas Corp., and Algonquin Gas Transmission Co.

•

El Paso Products Pipeline Co. will build a 32-mi. crude line in Sweetwater County, Wyo.

The 6⅝-in. line, which has been approved by the State Public Service Commission, will run from the Patrick Draw Field to tankage of Service Pipeline Co., near Wamsutter.

It will cost $652,100.

•

Natural gas rate hikes totaling $3.7-million a year by Houston Texas Gas & Oil Corp. and Coastal Transmission Co. have been approved tentatively by the Federal Power Commission.

The increases will go into effect on Dec. 1, subject to refund.

•

The Esso Seamen's Assn. has won the right to represent unlicensed seamen aboard 27 U.S.-flag tankers of the Esso Standard Division of Humble Oil & Refining Co.

Former bargaining agent was the Esso Tanker Men's Union, which was defeated by a vote of 681-384 in a recent National Labor Relations Board election.

A Little Island Becomes a Big Target

The long-overlooked island of Puerto Rico has suddenly emerged as the most sought-after market in the Caribbean. Four major oil companies are moving in on the island at the same time.

For decades, Puerto Rico has been a tranquil outlet for three majors: Texaco Inc., Standard Oil Co. (N.J.), and Shell Co. (Puerto Rico), a subsidiary of the Royal Dutch Shell group.

But late last year, Mobil Oil Caribe, Inc., a subsidiary of Mobil International Co. opened its first outlets. In November, Gulf Oil Corp. revealed that it, too, would market in Puerto Rico. Then, this year, Sinclair Caribbean Oil Co., a subsidiary of Sinclair Oil Corp., and Standard Oil Co. of California both revealed plans to expand into Puerto Rico.

Why this sudden interest in Puerto Rico? The standard explanation is that the island is growing as a market for petroleum products—thus justifying increased competition.

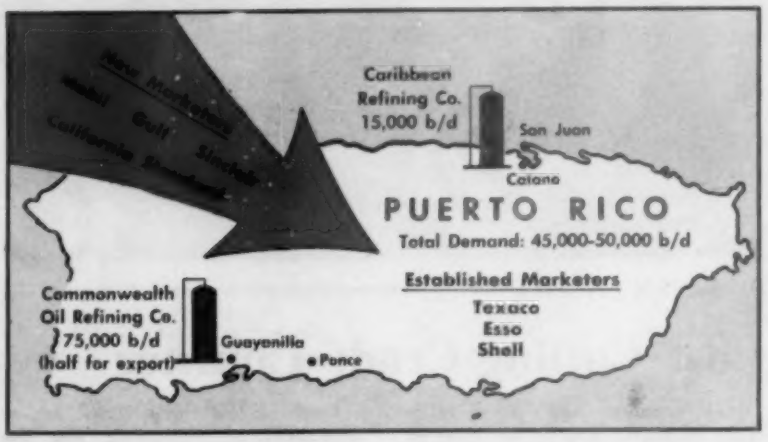
A glance at the statistics tends to justify this reasoning; total demand has nearly doubled since 1955. Here are the figures, as tabulated by the U.S. Bureau of Mines:

1955	28,400 b/d
1956	28,300 b/d
1957	35,900 b/d
1958	30,400 b/d
1959	47,300 b/d

Behind these figures lies a detailed story of growth in Puerto Rico:

- Since World War II, over 600 new industries have sprung up. Chiefly responsible for this industrial expansion is "Operation Bootstrap," which —primarily through liberal tax laws— has encouraged companies to invest in the island.
- Over the past 10 years, industrial demand for electricity has tripled, putting increased pressure on the demand for residual fuel, which last year was nearly 15,000 b/d.
- Since 1948-49, automobile registrations have more than tripled, pushing motor fuel demand to 12,500 b/d.
- Tourism is booming: Tourist nights (the number of tourists multiplied by the number of nights they stay) have increased by 50% during the past 12 months.

But despite this growth, interest in Puerto Rico's fundamentally small market is based more on another reason: its political stability.



The commonwealth's almost inseparable ties with the United States compare very favorably with the tenuous relations our country maintains with other Caribbean nations. The possibility of statehood, which is not necessarily viewed as stimulant to industrial growth, is seen nevertheless as a potential iron-clad safeguard to the existing market.

The big question, however, is: Can the Puerto Rican market support seven majors—where only three existed before? Already Mobil's experience forebodes extremely tight competition.

Choice service station sites have skyrocketed in price, exceeding $100,000 in certain highly desirable locations. Dealers have become extremely hard to find, as the established majors tighten up their commitments with their own dealers.

By the end of the year, Mobil expects to have 70 stations. It will have acquired practically all of its facilities by obtaining existing independently owned outlets. But, in addition, the company expects to erect two prefabricated "experimental" stations, and also to open a training station for its dealers.

More than half of all the approximately 650 stations in Puerto Rico are independently owned, and therefore represent potential prey for invading marketers. But Mobil has found these "potential" stations are becoming less easy to "convert," as the existing marketers increase their efforts to retain dealers.

As of last year, Texaco was the market leader with about 250 stations, Jersey Standard next with 210, and Shell with 200.

Thus far, the established marketers have reacted to their new rivals with stoic optimism. "We welcome the new competition," Jersey Standard says.

But behind this calm, plans are brewing for defensive maneuvers. Jersey has already made allocations for 13 new service stations in Puerto Rico.

With little apparent concern for the crowded market conditions, the new marketers are pressing forward to establish themselves. Gulf, for example, plans to open its first station in Puerto Rico by October, and to have 20 stations in operation by the end of the year.

Competitors have been watching apprehensively as Gulf representatives shop around for sites.

The first three Gulf stations to open will be located in San Juan, the island's capital and largest market. In addition, Gulf will enter Ponce, the second largest market, this year, as well as two other towns in Puerto Rico.

For a while, at least, Gulf plans to purchase its product from Caribbean Refining Co.'s 15,000 b/d plant, in which it owns a substantial minority interest.

Later, perhaps, Gulf will purchase products from the other, larger refinery on the island, a 75,000 b/d plant owned by Commonwealth Oil Refining Co.

Commonwealth has concluded purchase agreements with all the present marketers on the island, including

Mobil, which will transport its products by truck directly to its service stations. Half of Commonwealth's present production is exported.

California Standard, another newcomer, has revealed plans to build a terminal at Catano, near the Caribbean refinery, and is believed to be planning to supply its proposed service stations with imported products. It's not known whether such imports would come from the U.S. or foreign sources, although the fact that Puerto Rico is covered by U.S. import restrictions would tend to limit the latter.

California Standard's plans for island-wide marketing are not yet firmed up.

Sinclair expects to commence a "moderate, modest" marketing operating by the end of the year, with fewer service stations than the 70 that Mobil plans.

Like Mobil, Sinclair considers it unnecessary to build terminal facilities on the island, especially since it will concentrate at first on the San Juan market, which is near to its intended source of supply—the Caribbean refinery. Furthermore, Puerto Rico has many good highways, facilitating truck transportation.

Sinclair's move into Puerto Rico—long planned by the company—is actually part of its existing pattern of expansion in the Caribbean area. The Sinclair brand has long been known in such markets as Haiti, the Dominican Republic, Nassau, and Cuba.

All the established marketers in Puerto Rico import crude for sale to island refiners, and purchase their refined products in turn from these refiners.

This is a pattern that Mobil has followed, and one that Sinclair can be expected to follow once its marketing operations grow. At first, however, Sinclair will simply purchase its refined needs from the Caribbean plant.

Mobil, on the other hand, has made agreements with the Commonwealth refinery for sale of crude and purchase of products.

So tight have competitive conditions become in Puerto Rico that many marketers believe the only way to market successfully there is to attempt to make a profit on the sale of crude, rather than rely exclusively on profits from the marketing of products.

Crude imports into Puerto Rico are limited, of course, by federal import quotas. But both island refiners have made attempts to have their quotas increased. At present, Commonwealth is allowed 61,944 b/d and Caribbean 18,203 b/d.

What's New / IN MARKETING

Lion Oil Co., a subsidiary of Monsanto Chemical Co., is opening private brand outlets at the rate of almost one a month.

Under the Orbit brand, Lion has been concentrating on the southeast. Latest openings, in Birmingham, Ala., Savannah and Augusta, Ga., average 40,000 gal. a month.

One of the first Orbit outlets—located in Baton Rouge, La., featured a towering double arch made entirely of plastic (PW—Feb.19'60,p93).

•

The Federal Trade Commission revealed last week that it will investigate gasoline price wars in the Salt Lake City area.

Although there is no current price war there, a protracted trend of depressed prices has brought many complaints to FTC.

•

Compact cars will command 50% of U.S. auto sales by the end of 1961, and will take 65% of this market by the end of 1963 predicts George Romney, president of American Motors Corp.

Romney bases his forecast on the current sales trends of compact cars, which now have reached 28% of U.S. new-car sales.

•

Early this week, American Oil Co. abandoned its agreement with the State of New York, in which government drivers were given a discount of 1½¢ per gal. off posted prices at Amoco stations.

The state had won the discount by promising American all of its gasoline business—about $1-million a year. All drivers of official cars were required to use Amoco stations.

Amoco's reason for dropping the agreement echoed the familiar complaint of other majors serving commercial accounts: It isn't "economically justified."

•

Another blow to coin-operated gasoline pumps in Wyoming was struck last week: In Cheyenne, a district judge upheld a fire marshal's right to close such self-operated pumps.

Judge Allen A. Pearson ruled that coin-operated pumps violate the state's fire safety regulations.

•

The Anthracite Information Bureau announced last week a plan for leasing coal-burning heating equipment to owners and managers of cold-water flat buildings and other commercial properties.

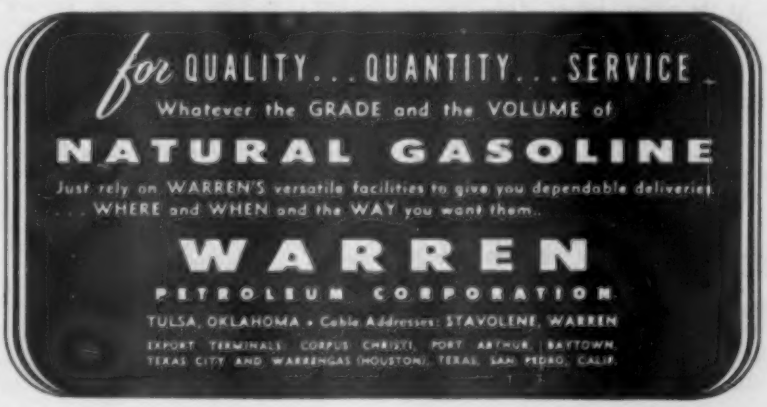
In a move to revive the market for coal, the anthracite group offers a three-year rental plan.

By using coal instead of other automatically fed fuels, owners of 22-family apartments, for example, will save $650 to $1,850 over the three-year period, the bureau contends.

•

The average octane ratings for both premium and regular gasoline remained unchanged last month, according to Ethyl Corp.

Premium averaged 99.4-octane, and regular was 92.5-octane.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H. Kaylor

S. S. Smith

HOWARD KAYLOR has been promoted to field sales manager for the oilfield equipment plants of Parkersburg Rig & Reel Co., and **S. S. SMITH** has been named sales manager of the company's Rocky Mountain division. Kaylor, who joined the company last year in Coffeyville, Kan., was most recently product manager of the company's production equipment plant in Houston, where he will continue to be located. He has also been associated with Union Oil Co. of California, Creole Petroleum Corp., and Standard Oil Co. of California. Smith, who will be located in Denver, was formerly a salesman there.

DR. VAN W. BEARINGER has been promoted to director of research for Minneapolis-Honeywell Regulator Co. Bearinger, who has been associate research director since 1956, succeeds **Dr. Finn J. Larsen,** who was elected vice-president in charge of research about a year ago. Bearinger will supervise activities of the company's research center in Minneapolis. At the same time, **Dr. John N. Dempsey** and **Edward E. Rexer** were named to newly created positions as assistant research directors. Dempsey has been with Honeywell since 1952, and Rexer has been a research section head since 1955.

ROY R. ROHRER moves up from sales representative to district manager at Houston for Western Supply Co. He has been with Western since 1958. **Joe B. Byrd,** formerly with Vinson Supply Co., has joined Western's Houston sales staff.

C. D. DEVER, technical service and development, Dow Chemical Co., transfers to Tulsa for an assignment at the general offices of the Dowell Division. Dever, who continues as a member of Dow's TS&D petroleum section, will be responsible for liaison between Dowell and company departments involved in chemical development projects. He will also continue with development work on chemical uses in the oil industry, including drilling mud chemicals, completion fluids, and treating agents for primary and secondary recovery.

R. P. STUNTZ has been named manager of field sales, and **L. D. CHRISTIE, JR.,** production manager, technical sales, for Babcock & Wilcox Co.'s refractories division, in New York. Stuntz, formerly assistant sales manager, will direct the division's district sales personnel, agents, distributors, and dealers. Christie was previously assistant to the division's technical director. He will direct field testing and evaluation of new products, and provide technical services to field sales personnel. Both men will report to **M. J. Terman,** refractories division sales manager.

C. L. McDOUGALL has been appointed assistant parts sales manager for Cooper-Bessemer Corp., Mt. Vernon, Ohio, and **O. W. Stanley** succeeds him as branch manager of the company's Odessa (Tex.) office. McDougall, who joined C-B in 1950 as a sales engineer, became branch manager in Odessa in 1957. Stanley was most recently a sales engineer in the Houston office. In his new position, Stanley will direct C-B's field sales and service activities in the West Texas area, and will report to **C. H. Sanders,** Southwest district manager. **Donald A. Harnsberger** has joined C-B's international division as technical coordinator, reporting to **Charles G. Cooper,** vice-president and international director. He had been field service engineer for C-B from 1950 to 1953. He was most recently a mechanical engineer with Pegasus Laboratories, Inc., and before that, was senior nuclear engineer for General Motors Corp.'s research staff.

C. L. McDougall

R. L. Morris

R. L. MORRIS becomes regional field development engineer for Schlumberger Well Surveying Corp., at Houston. Morris, who has been with the company since 1937, was formerly manager of the North Louisiana division, with headquarters in Shreveport. **Louis L. Raymer,** former special services engineer in the Houston district, transfers to Schlumberger's headquarters staff there. His assignment includes study of logging problems, consultation with customers, and preparation of technical information for publication.

ROBERT L. SOLNICK has been named chief project engineer, sample handling systems, in the scientific and process instruments division of Beckman Instruments, Inc., Fullerton, Calif. Before joining Beckman, Solnick was chief research engineer in charge of the physical section of Fluor Corp.'s research division at Los Angeles.

PAUL C. WALLACK is president, and **R. W. Wire** vice-president in charge of sales, of a new company, Western Industries, Inc., Tulsa, which engages in engineering, construction, and management activities for the petroleum industry and allied fields. Wallack was formerly president of Walco Engineering & Construction Co., which recently was voluntarily liquidated. Wire is a former president of Loffland Bros. Co. **Marvin E. Fox** is vice-president of the new firm in charge of engineering, and **Parker H. Capps** is vice-president and secretary-treasurer. Fox and Capps were formerly associated with Walco.

DR. WILLIAM B. HEROY, JR., vice-president and a director of Geotechnical Corp., Garland, Tex., moves up to executive vice-president. Heroy joined Geotech in 1945.

W. B. Heroy, Jr.

E. J. McLaughlin

EDWARD J. McLAUGHLIN has been named manager, sales and products development, for Oronite Chemical Co.'s recently created petroleum chemicals division, with headquarters in San Francisco. He will supervise marketing, technical service, and development of the division's new products, including lubricating oil additives, high temperature hydraulic fluids, butadiene, and catalysts. McLaughlin has been associated with Oronite's parent, Standard Oil Co. of California, and its research affiliate, California Research Corp., for the past 25 years. He was most recently supervisor of the engine lubricants section at Cal Research's Richmond (Calif.) laboratories.

JOHN DALE VINEYARD has joined Hardy-Griffin Engineering Corp.'s sales staff in Odessa, Tex. He has been engaged in oilfield sales in West Texas since 1952.

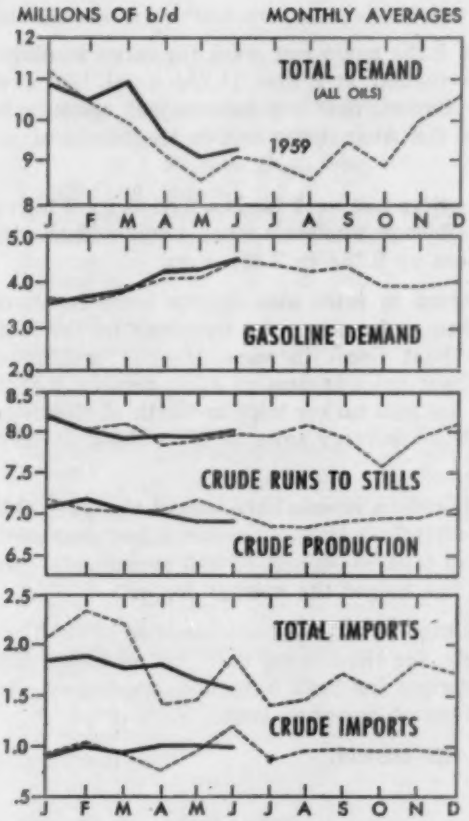
J. D. Vineyard

D. N. Johnson

DALE N. JOHNSON is the new sales and service representative in Houston for Grove Valve & Regulator Co. For the past seven years, he has been associated with Franklin Supply Co.

PETROLEUM WEEK'S

Fingertip Figures



Supply-Demand Figures for July

(millions of b/d)

	July 1960	% Change from year ago	7 Months 1960	% Change from year ago
Total Demand (Inc. Exports)	9,474	+ 5.7	9,924	+2.3
Gasoline	4,659	+ 3.8	4,162	+1.5
Distillates (Inc. Kerosine)	1,581	+19.1	2,318	+6.2
Residual	1,284	+ 4.2	1,653	—1.7
Total Supply	9,285	+ 2.6	9,747	—0.9
Domestic Crude	6,835	+ 0.8	7,020	—1.6
Nat. Gas Liquids	900	+ 6.5	927	+6.7
Total Domestic	7,735	+ 1.4	7,947	—0.7
Crude Imports	950	+ 7.1	995	+4.8
Total Imports	1,550	+ 9.5	1,801	—1.8

Figures for period ended July 29, except as noted

RUNS TO STILLS

Latest week	8.290
Previous week	8.204
Year ago	7.997

CRUDE PRODUCTION

Latest week	6.821
Previous week	6.855
Year ago	6.909

TOTAL IMPORTS

Latest week	1.457
Previous week	1.651
Year ago	1.323

CRUDE IMPORTS

Latest week	.906
Previous week	1.029
Year ago	.923

Gasoline demand soared to an all-time high in July.

Demand for motor fuel averaged 4,659,000 b/d, an increase of 169,000 b/d over a year ago. For the first seven months, gasoline demand topped 1959 levels by 63,000 b/d.

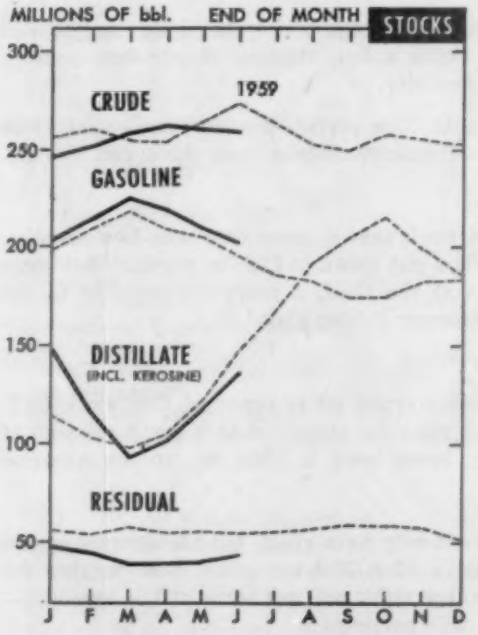
July was a good month all around, demand-wise, with the major products scoring sizable gains.

Total demand was up 512,000 b/d from last July, and so far this year it is running 227,000 b/d higher than for the seven-month period of 1959.

But refinery runs hit a new peak for July, too.

Crude processed through refineries averaged 8,258,000 b/d, a hefty 377,000 b/d higher than last July. This is just 21,000 b/d below the previous record for any month, which was reached in January of this year.

Runs to stills began their climb above the 8-million-bbl. mark in mid-June, and have maintained the high level ever since.



CRUDE STOCKS

Week ended July 23	244.9
Previous week	245.9
Year ago	264.7

GASOLINE

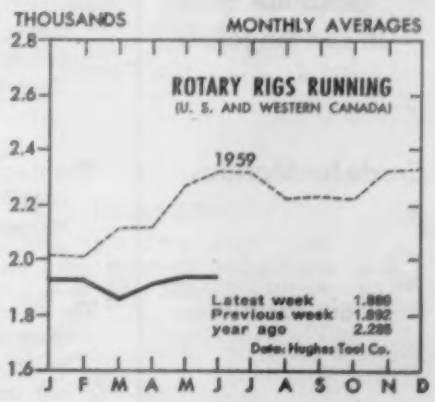
Latest week	193.2
Previous week	194.8
Year ago	188.5

DISTILLATES

Latest week	158.7
Previous week	153.5
Year ago	168.8

RESIDUAL

Latest week	43.4
Previous week	43.5
Year ago	86.7



The Market Trend

For a Change, Prices are Pointing Up

Everything in the U.S. seems to be going up right now: Prices for Gulf Coast gasoline, Midwest distillates, Chicago No. 6 oil, and U.S.-flag tanker rates.

Gulf Coast gasoline jumped 0.25¢ again last week for cargo loadings. The latest move puts 92 octane regular at a firm 11.25¢ a gal. Six East Coast buyers have been in the market, plus one independent operator in Los Angeles. Not many cargoes for August are left in the hands of independent refiners.

Indiana Standard raised its prices last week for No. 6 oil at its Whiting and Wood River refineries. The Chicago wholesale market followed shortly thereafter, with tank truck prices up 0.25¢ to 7.65¢ a gal.

Distillates are pushing upward in price also. Spotty increases have taken place at Chicago, Milwaukee, and a few river terminals on the Mississippi. More importantly, an East Coast increase of good proportion seems in the cards. The Gulf Coast price is firm at 8.25¢ for No. 2 fuel, and it now takes about 1¢ a gal. for spot tanker trips to North of Hatteras. This arithmetic makes the contract delivery price at New York, at 8.7¢, look very strong.

And tanker rates for U.S.-flag clean vessels have wowed the trade this summer. They're up to USMC +7½%, a level not reached last year until mid-December. Lots of U.S. clean tankers—about 35 T-2 equivalents—are in grain trading now, and this has helped the market for oil.

How long will the increases keep on? As a guess, gasoline at the Gulf may be near the top of the cycle, for the buying rush has subsided. But refiners will plump for higher prices for both light and heavy fuel oils, some of which have recently been at five-year lows.

Refinery runs will provide the answer.

South Side: Tough Spot in Chicago:

The gasoline tank wagon advance in Chicago last week almost got stalled on the South Side of town. Quite a few stations there were posting prices 7¢ below the rest of the city.

Late last week, however, the South Side private-branded came back close to "normal." And tank wagon prices eventually were advanced by 0.8¢.

Gasoline Slips In Los Angeles:

The only spot in the nation last week taking price cuts was Los Angeles. Rack prices there dropped 0.15¢ a gal. down to 11¢ for regular. But some sellers feel that stiffer prices at the Gulf, a marginal supplier to the West Coast, will make for stronger prices ahead.

Crude for Manaus:

The deepest penetration of Russian crude oil is reported this week from Brazil. About 1,500 b/d are planned for shipment to a small refinery at Manaus. This one-time rubber boom town is 1,200 mi. up the Amazon.

Grain for India:

The clean U.S.-flag tanker rates not only have risen, but shipowners expect them to stay up. The U.S. has a 17-million-ton grain deal cooking for India. Granted that U.S. dry-cargo ships will get some of the business—but tankers almost certainly will participate.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of August 1

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- **Gasoline, 98 oct prem.....12.25†-13.25†**
- **Gasoline, 92 oct reg.....11.25†-11.5†**
- Kerosine 9-10
- Heating oil, No. 2.....8.25-9
- Gas oil, 48-52, d.i.....8.5-8.875
- Fuel oil, bunker "C".....$2.30

Caribbean, cargoes
- Avgas, Grade 100/130.....14.75
- Gasoline, 93 oct research prem.....11
- Gasoline, 87 oct research reg.....10.125
- Gasoline, 80 oct research.....9.375
- Gasoline, 70-72 oct motor method.....9.25
- Kerosine 9.25
- Heating oil, No. 2.....8.125-8.25
- Gas oil, 48-52 d.i.....8.375-8.5
- Fuel oil, bunker "C".....$2.00

New York Harbor, barges
- Kerosine 9.8-10.3
- Heating oil, No. 2.....8.8-9.3
- Fuel oil, No. 6.....$2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg.....12-12.75
- Kerosine 9.875-10.125
- Heating oil, No. 2.....8.5-9
- Fuel oil, No. 6.....$1.80-1.90

Chicago, bulk
- Gasoline, 91 oct reg.....12.5
- Heating oil, No. 2.....9-10.35
- **Fuel oil, No. 6 high sulfur.....7.65†**

Los Angeles, rack
- **Gasoline, 88 oct reg.....11↓-12.65**
- Diesel fuel, PS 200.....7.75-11.25
- Light fuel, PS 300.....$2.80
- Heavy fuel, PS 400.....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3.....4.5
- FOB Breckenridge, Tex.....4

LP-Gas
- Propane, Oklahoma (Group 3).....3.5-4
- Propane, Baton Rouge.....4.625

Pennsylvania Lubes
- Bright stock, 25 p.t.....24
- 200 vis. neutral, 25 p.t.....27

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i.....26-27
- Neutral, solvent, 200-210 vis.....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i.....26
- Neutral, solvent, 200 vis.....23

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130.....15.875
- Gasoline, 79 oct research.....9.75
- Kerosine 10.125
- Gas oil, 48 d.i. minimum.....9.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9.....$2.62-2.97
- North Dakota, 36.0-36.9.....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9.....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9.....2.92-3.22
  - West Texas, sweet, 36.0-36.9.....3.00
  - West Texas, N.M., inter., 36.0-36.9.....2.93
  - West Texas, N.M., sour, 32.0-32.9.....2.71
  - East Texas, flat.....3.05-3.25
  - Mirando, 28.0-28.9 .....2.96-3.31
- Illinois Basin, flat 2.85-3.00
- **Pennsylvania Grade, Bradford dist., flat.....4.80†**
- California, Signal Hill, 21.0-21.9.....2.32†
- North Louisiana-Arkansas, 36.0-36.9.....2.72-3.02
- Wyoming, sweet, 36.0-36.9.....2.85-2.90
- Wyoming, sour, 32.0-32.9.....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.).....$2.38
- Leduc-Woodbend (Alta.) 2.53
- Redwater Alta.) 2.42
- Steelman A (Sask.).....2.44
- Virden (Man.) 2.30

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz.....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz.....2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay.....2.30
- Bachaquero, flat La Salina.....1.85
- Tarra, 38.0-38.9, San Lorenzo.....2.83
- Lagunillas Heavy, flat, La Salina.....2.07

†Differential per deg. of grav. varies

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura.....$1.90
- Safaniya, 27.0-27.9, Ras Tanura.....1.50
- Iran, 34.0-34.9, Bandar Mashur.....1.86
- Iran, 34.0-34.9, Abadan.....1.81
- Iraq, 35.0-35.9, Fao.....1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi.....1.67
- Qatar, 41.0-41.9, Umm Said.....2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud.....1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud..1.38

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon.....$2.27
- Iraq, 36.0-36.9, Tripoli, Banias.....2.31

North Africa, Phillipeville, Algeria
- Hassi Messaoud, 48 and above.....$2.77

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U.S. Gulf-New York, clean (USMC+7½%) $3.06†**
- **U.S. Gulf-New York, dirty (USMC—12½%) $2.49†**
- NWI-USNH, dirty .....(USMC—55%) $1.24
- NWI-UK/Cont., dirty.....(Scale—52½) 15/7*
- Persian Gulf-UK/Cont., dirty.... (Scale—65%) 23/5*
- Persian Gulf-USNH, dirty.....(USMC—70%) $3.81

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522 South Boston
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England, London E.C. 4 — E. E. Schirmer
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V. W. FLETCHER has been elected vice-president of Asiatic Petroleum Corp., New York, one of the Royal Dutch Shell Group. He succeeds **S. J. Veenstra**, who is taking a position with Shell International Petroleum Corp., in London. Fletcher will assume over-all responsibility for the materials purchasing, traffic, and service departments. He was most recently manager of materials and purchasing agent for Asiatic. He joined the Shell organization in 1926 as an employee of Caribbean Petroleum Co., and has served in Venezuela, Colombia, Ecuador, Borneo, and the United Kingdom. He has been with Asiatic since 1950.

V. W. Fletcher

B. H. Lord, Jr.

B. H. LORD, JR., is the new director of the American Petroleum Institute's Division of Transportation, succeeding **James E. Moss**, who is retiring. Moss has headed the division since it was organized in 1946. He will continue to serve as a special consultant on the staff of Frank M. Porter, API president. Lord, who joined the API staff in 1946, has been associate director of the Division of Transportation for the past year.

D. E. ANDERSON and **C. E. COLE** have been elected vice-presidents of Canada-Cities Service Petroleum Corp., Calgary. Anderson, with the Canadian company since 1952, continues as manager of operations. He joined the Cities Service organization in 1930 at Bartlesville, Okla. Cole, who is also exploration manager, will direct the exploration program of Canada-Cities Service, now concentrated in Alberta. Cole, who has been associated with Cities Service since 1941, became chief geologist for the Canadian company in 1950. He later served as chief geologist and then exploration manager of Arkansas Fuel Oil Corp., a Cities Service subsidiary. He returned to Canada-Cities Service earlier this year.

DR. PHILIP S. NISSON has been promoted to manager of the technical department of Pure Oil Co.'s refining division, in Chicago, and **Dr. Edward P. King** has been promoted to assistant manager of the division's operating department there. Nisson joined Pure in 1933 as a resident chemist at the old Muskogee (Okla.) refinery. He has been assigned to the Chicago office since 1934. In his new position, Nisson succeeds **Adolph Spiehler**, who will remain with Pure in an advisory capacity. King, who joined Pure in 1936, became superintendent of the technical department at the Smiths Bluff (Tex.) refinery in 1953. Since 1956, he has been active in the development of computer applications for refining operations, at Pure's Chicago headquarters.

ERIC B. HJERPE becomes director of the operations planning and scheduling division at Gulf Oil Corp.'s Port Arthur (Tex.) refinery, and **Herman Taylor, Jr.**, succeeds him as supervisor of the special projects section in the process engineering department there. Hjerpe replaces **Marvin L. Ralston**, who transferred to Gulf's general offices in Pittsburgh. Taylor, who has been with Gulf since 1943, was assigned to process engineering department in 1959.

O. G. SIMPSON moves to New Orleans as assistant division manager of Sinclair Oil & Gas Co.'s exploration and production operations in the southeastern states and offshore in the Gulf of Mexico. He was formerly assistant manager of the Midland, (Tex.) division. In his new position, Simpson will work under **R. A. Wright**, vice-president and manager of the New Orleans division.

O. G. Simpson

W. S. Davidson, Jr.

WILLIAM S. DAVIDSON, JR., moves up to manager of Tidewater Oil Co.'s eastern division transportation department, with offices in New York. He replaces **Allen L. Piper**, who transfers to the Tidewater's western division. Davidson has been general superintendent of the western division pipeline department, in San Francisco, since 1956. Before that, he was superintendent of the San Joaquin Valley district pipeline.

WALLACE W. RANGELER and **HERBERT L. DURGAN** are new senior research geologists for Sun Oil Co.'s Gulf Coast production division, at Beaumont, Tex. Rangeler has been in charge of the geological department's development section there since 1948, and Durgan was formerly a regional geologist at Beaumont. **Allen M. Borland, Jr.**, formerly a regional geologist there, will now be assistant to **Herbert Parker**, division chief geologist. **W. T. Storie, Jr.**, has been appointed regional geologist in the development section, and **Fred H. Christian, Jr.**,

assistant manager in that section. Both men were formerly senior geologists at Beaumont.

CHARLES W. BOHMER, JR., formerly manager of industrial and consumer sales in the Esso Standard division of Humble Oil & Refining Co., in New York, joins Humble's headquarters staff in Houston. He will serve as assistant in marketing matters to **D. W. Ramsey, Jr.,** Humble's vice-president and director for marketing. Bohmer has been with Esso Standard since 1933; he has also served as assistant manager of the New Jersey sales division, New York regional sales, manager, and industrial sales manager.

C. W. Bohmer, Jr. J. G. Hough

J. G. HOUGH has been promoted to general manager of petrochemical sales for Continental Oil Co., with headquarters in New York. He was formerly manager of the petrochemical department's chemicals division. Hough succeeds **H. P. Solem,** who was recently appointed executive vice-president of Refineria Panama, S.A., a Conoco affiliate, with offices in New York. **S. W. Harris** has been promoted to sales manager, with responsibility for domestic sales of detergents, white oils and petrolatums, petroleum sulfonates, plastic intermediates, and oilfield products. Harris moves to New York from Chicago, where he was regional sales manager of the petrochemical department. Other members of the petrochemical sales staff promoted to new positions are: **V. F. Kavanagh,** New York, formerly director of detergent sales, now manager of detergent sales; **A. J. Lacazette,** Englewood, N.J., eastern regional sales manager, now manager of white oil and petrolatum sales; **A. C. Kellermann,** New York, director of petroleum sulfonate sales, promoted to manager of petroleum sulfonate sales; **R. S. Mooney,** New York, director of sales development, promoted to the newly created position of manager of plastic intermediates sales; **R. T. Means,** Midland, Tex., supervisor of oilfield sales, now manager of oilfield sales, and **D. F. MacFarland,** New York, sales development representative, now manager of advertising and sales promotion. All will continue to be located at their former headquarters.

LEO V. GRIGONIS is the new general manager for the Mobil Companies in Ghana, Sierra Leone, and Liberia, with headquarters in Accra, Ghana. He replaces **Richard M. Sheridan,** who is returning to the United States for advanced management training before reassignment. Grigonis joined Mobil in 1946 as a sales representative in Colombia. He has also been Mobil manager in Israel and Cyprus. He was most recently general manager of Mobil Oil do Brasil.

EBER H. PETERS has been appointed manager, southwest manufacturing, of the basic petroleum chemicals division of Mobil Chemical Co., with headquarters in Beaumont, Tex. Peters will be responsible for coordination of contacts with customers' plants in the Southwest, and for direction of chemical manufacturing operations. He was formerly southwestern manager of the petroleum chemicals department of Mobil Oil Co. Peters joined the Mobil organization in 1940 as junior process engineer at Mobil's Beaumont refinery. He was named technical director there in 1956. Mobil Chemical is currently constructing a high-purity ethylene plant at the Beaumont site.

MARSHALL L. MASON, JR., has been named assistant geological coordinator for the United States and Canada for Union Oil Co. of California, with offices in Los Angeles. He was formerly geological and geophysical coordinator of Union's West Texas division, at Midland.

W. T. HUGHES, JR., secretary of California Texas Oil Corp., New York, has also been appointed general counsel. Hughes joined Caltex in 1949, and before that, was in private law practice.

LEE P. MORRIS becomes assistant manager of the Hawaiian refinery of Standard Oil Co. of California, Western Operations, Inc., in Honolulu. He was formerly located in Grand Junction, Colo., where he was refinery manager of American Gilsonite Co., a Standard affiliate.

L. P. Morris G. F. Bassler

G. F. BASSLER has been promoted to the newly created position of assistant to the general manager of manufacturing for Continental Oil Co., Panama operations, with offices in Houston. Bassler was formerly director of personnel development, at Houston. In his new position, he will assist **D. R. Johnson,** vice-president and general manager of Conoco's manufacturing department and the management of Refineria Panama, S.A., a Conoco affiliate, on personnel and industrial relations matters in organizing and staffing a refinery now under construction in Panama.

I. E. LEVINE has been elected vice-president of California Research Corp., subsidiary of Standard Oil Co. of California, with responsibility for the chemical research department. He succeeds **J. Q. Cope,** who has become vice-president of California Chemical Co., another Standard affiliate. **H. M. Lavender** succeeds Levine as manager of Cal Research's chemicals research division, at the Richmond (Calif.) laboratory. **J. F. Senger,** formerly senior coordinator, process design and engineering, in the San Francisco office, succeeds Lavender as manager of the process and engineering division at Richmond, and **E. B. Chiswell,** formerly with California Chemical, succeeds Senger.

JOE W. PERRY, marketing director of Pauley Petroleum Inc., Los Angeles, has been named executive vice-president of its newly formed subsidiary, Pauley Stations, Inc. Perry will be responsible for the company's plans to market petroleum products under the Pauley name. He has also been marketing manager for Tidewater Oil Co.'s New York district, and sales manager of Hancock Oil Co.

EARL A. MATHENY has been elected treasurer of Mid-America Pipeline Co., Tulsa. He was formerly treasurer of Jenkins Music Co., Kansas City.

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PETROLEUM WEEK

A Grim Fairy Tale in Canada

WESTERN CANADIAN PRODUCERS are waking up to the reality that yesterday's dreams of a brighter tomorrow have about run their course. The dreams were strictly dreams.

The producers were tucked in their beds last winter with a thick volume of fairy tales, popularly known as the Borden Commission report. It was soothing to read, and the producers had hopes of waking up to a demand of 700,000 b/d by the end of 1960.

The promises were based on optimistic estimates of growth in domestic demand in Canada plus hopes that exports to the U.S. would rise. But so far, production of crude in Canada is running at just a little over 500,000 b/d, of which approximately 115,000 b/d is being exported to the U.S. The prospects for a big increase are slim.

Canadian producers feel that something must be done, since they are producing no more than half their potential. They will find sympathetic understanding of their plight among producers in the U.S. who share a common enemy—imported oil.

THERE WILL BE MORE STUDIES of the Canadian situation, the federal government at Ottawa has promised. Among other possible measures of relief, the government is reported to be considering a plan to require refiners in Montreal—Canada's largest market area—to use a specified percentage of Canadian oil.

Montreal refiners say western Canadian oil is too expensive and that they won't use it unless forced (which they will oppose) or unless the price is cut (which producers will oppose).

And while that is being argued, the Calgary Chamber of Commerce, which has a stake in the economic health of Alberta producers, has proposed a course of action. It has suggested that the government declare as policy that every participant in Canada's market for petroleum products shall be responsible for its pro-rata share of growth of markets for Canadian crude, either by using it to a greater degree in Canada or by finding a home for it outside of Canada.

The Calgary chamber set as its target an expansion of domestic crude output to 600,000 b/d immediately, 650,000 b/d within six months and 700,000 b/d within a year.

It wants to keep its suggested plan on a voluntary basis as long as the marketers do something about it in 60 days. Otherwise, it should become mandatory by government order, the chamber says.

AMONG ITS SUGGESTIONS to expand demand for Canadian crude, the Calgary group recommends that marketers encourage larger exports to nearby areas in the U.S.

It is at that point that the sympathetic understanding that U.S. producers may have had for their Canadian compatriots fades out—just as the latter's dreams did.

Heating season ahead

Time to stabilize and improve your heating oils with FOA-2

No filter clogging. No nozzle plugging. No sludge.

These are qualities you can add to your heating oils, and at low cost, too. Result: a clean, hot, steady-burning fuel that wins added friends for your brand product.

You need only a few pounds of Du Pont Fuel Oil Additive No. 2—usually 5 to 15 pounds per 1,000 barrels—to do the job. This concentration has stabilized millions of barrels of heating and fuel oils since the introduction of Du Pont FOA-2 nine years ago.

FOA-2 solubilizes and disperses. Prevents sludge formation. Dissolves sludge which may already have formed. Reduces insoluble residue to such small particles that they flow and burn right along with the oil. *It stabilizes your product.*

Of course, FOA-2 is ashless—burns completely with the fuel, leaves no traces to foul the burner nozzle.

28 pages of facts. Our 28-page bulletin, "Du Pont FOA-2 for Diesel, Heating, Residual Fuels," contains full details on chemical, physical and performance characteristics. Ask your Du Pont Petroleum Chemicals representative for a copy, or write: E. I. du Pont de Nemours & Co. (Inc.), Petroleum Chemicals Division, Wilmington 98, Delaware.

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Hughes engineered bit programs are lowering

hole time and bit costs—from Alberta to Louisiana

Every week, new field reports tell us how Hughes Engineered Bit Programs are cutting drilling costs.

In case after case, results have proved that in any formation, where the *right* bits are run with the *right* combination of weights, rotary speeds and hydraulics — hole time can nearly always be lowered. And the number of bits reduced!

There's an experienced Hughes field representative in your area who will be glad to work with you in setting up a *cost-saving* bit program for your next well — a service that is made possible through the use of Hughes bits.

Here are some recent examples of savings made with Hughes Engineered Bit Programs:

Alberta, Canada: Time to drill 10,000-foot well was reduced from 402 to 252 hours; the number of bits from 43 to 22.

Norman, Oklahoma: Five days cut from time required to drill an 8800-foot well; 14 fewer bits used.

Meade County, Kansas: On comparative 4200-foot wells, drilling time was reduced by 4 days; cost per foot of hole by 19 percent.

San Juan County, New Mexico: Following Hughes program, contractor lowered cost per well by $5,000.

Vermillion Parish, Louisiana: Over 100 hours trimmed from the best previous time in drilling 12,000-foot wells.

HUGHES TOOL COMPANY

ORIGINATOR AND WORLD'S LEADING DEVELOPER OF CONE-TYPE ROCK BITS